

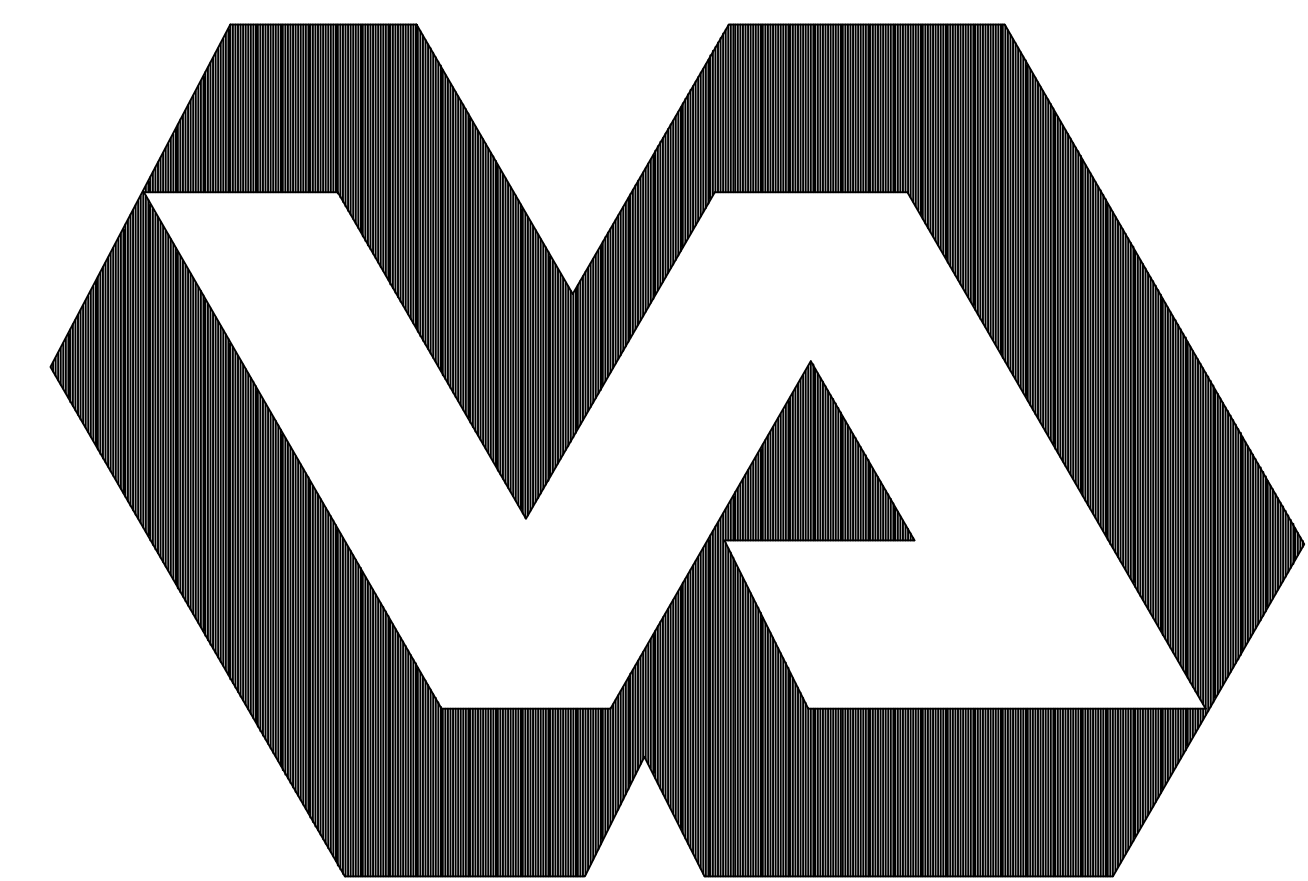
DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER - WADE PARK

10701 EAST BLVD. CLEVELAND, OH. 44106

CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES

PROJECT NO. 541-11-108

Veterans Administration
Medical Center



CODE INFORMATION (FOR ENERGY CENTER):

DESIGN CODES:
2009 Life Safety Code, 2009 IBC
OCCUPANCY,USE GROUP:
F-1 (Existing)
FIRE SUPPRESSION: Fully Sprinklered
TYPE OF CONSTRUCTION:
Type 2 - 000, 2B
BEARING WALLS:
0 Hours
STRUCTURAL COLUMNS:
0 Hours
FLOOR - CEILING ASSEMBLIES:
0 Hours
ROOF - CEILING ASSEMBLIES:
0 Hour
INTERIOR NONBEARING WALLS:
0 Hour

CODE INFORMATION (FOR EXISTING HOSPITAL):

DESIGN CODES:
2009 Life Safety Code, 2009 IBC
OCCUPANCY,USE GROUP:
Health Care, I-2
FIRE SUPPRESSION: Fully Sprinklered
TRAVEL DISTANCES: (LSC 18.2.6)
Room Remote Point to Exit: 200'
Exit Access door to Exit: 150'
TYPE OF CONSTRUCTION: (LSC A.8.2.1.2)
Type 1 - 332, 1B
STRUCTURAL COLUMNS: (LSC A.8.2.1.2)
3 Hours - Supporting more than 1 floor
2 Hours - Supporting one floor only
FLOOR - CEILING ASSEMBLIES: (LSC A.8.2.1.2)
2 Hours
INTERIOR NONBEARING WALLS: (LSC A.8.2.1.2)
0 Hour
SHAFT ENCLOSURES (LSC 8.6.5)
4 Stories or more: 2 Hours
Less than 4 stories: 1 Hour
SMOKE BARRIERS: (LSC 18.3.7.4)
1 Hour

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EMERGENCY GENERATOR

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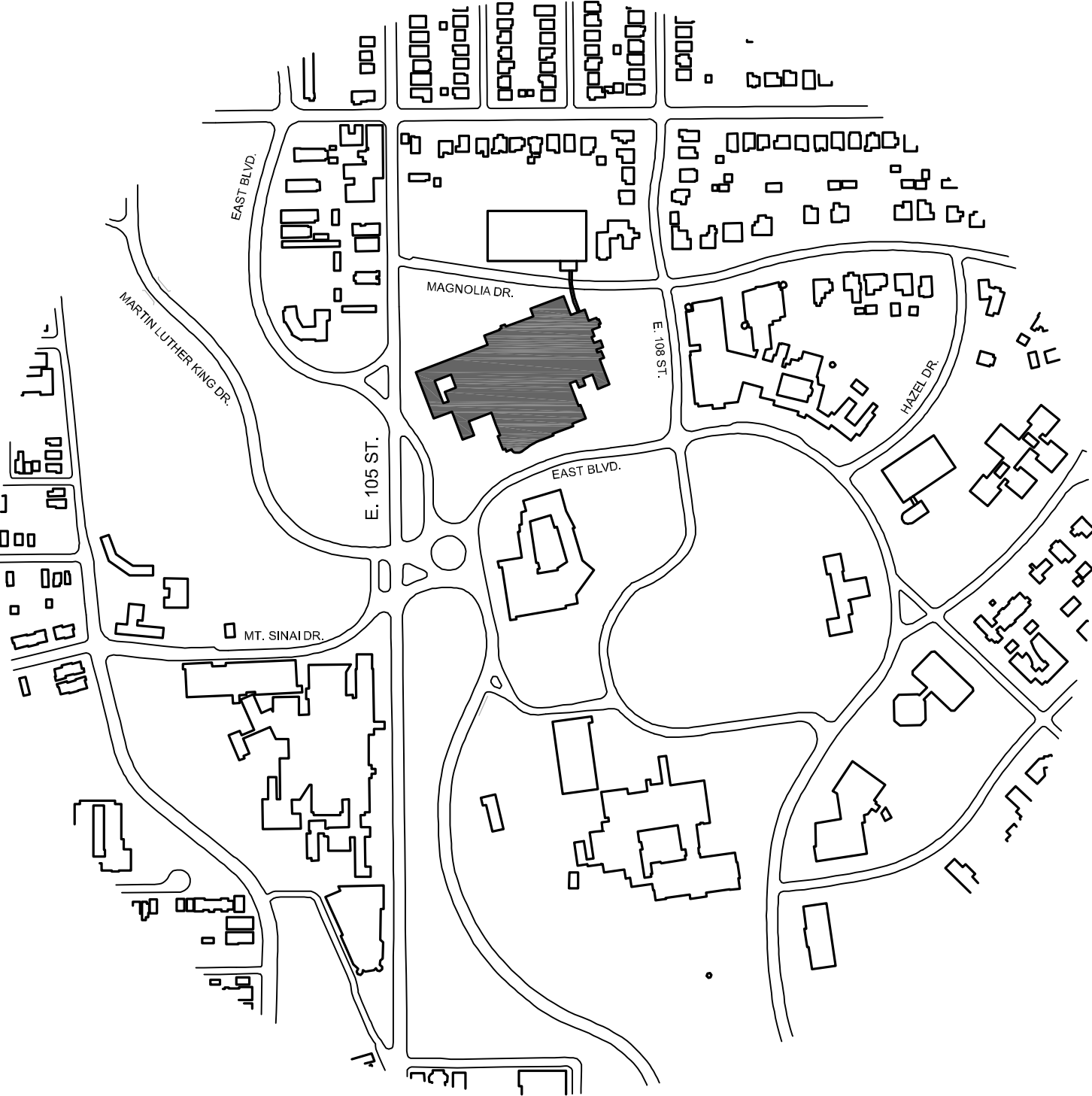
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3-H7 PARTIAL PENTHOUSE PIPING PLAN DEMO
3-H8 PARTIAL PENTHOUSE PIPING PLAN

FINAL CD SUBMISSION - FOR CONSTRUCTION

April 6, 2012



KEY PLAN

NTS



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|----------------------------|--|------|--|-------------------------------------|--|------|--|------------------|--|------|--|-------------------------------------|--|---|--|------------------------------|--|--|--|--------------|--|
| APPROVALS | | DATE | | APPROVALS | | DATE | | APPROVALS | | DATE | | Project Title COVER SHEET | | Project Title CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES | | Project Number 541-11-108 | | Office of Facilities Management | | | |
| DIRECTOR 00 | | | | CHIEF Planning and Construction | | | | FACILITY MANAGER | | | | Approved: Division Chief | | Location VAMC - WADE PARK | | Building Number 1 | | | | | |
| ASSOCIATE DIRECTOR 00A (B) | | | | CHIEF, Occupational Health & Safety | | | | SHOP FOREMAN 138 | | | | Approved: Service Director | | Date 04-06-2012 | | Checked DAD | | | | Drawn DAD | |
| CHIEF, ENGINEERING 138 | | | | CHIEF, IRM | | | | | | | | | | | | | | | | | |
| Revisions | | | | | | | | | | | | | | | | | | | | | |

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one sixteenth inch = one foot

CODES AND STANDARDS

- Building has been designed to, and shall be constructed in accordance with the following building codes and standards:
 - 2006 International Building Code (IBC 2006)
 - ASCE/SEI 7-05, Minimum Design Loads for Buildings and Other Structures
- Unless explicitly modified in the Contract Drawings and Specifications, the Contractor shall comply with provisions of:
 - ACI 301-05, Specifications for Structural Concrete
 - ACI 318-05, Building Code Requirements for Structural Concrete

DESIGN STRESSES

Concrete (strength design) minimum compressive strength in 28 days:
Interior equipment pads $f_c = 4,000$ psi
Concrete subject to freezing and thawing $f_c = 5,000$ psi
Reinforcing bars (ASTM A615, Grade 60) $f_y = 60,000$ psi
Welded wire reinforcement (ASTM A185) $f_y = 30,000$ psi
Soil bearing pressure for foundations bearing strata 2000 psf

GENERAL

- All new construction shall comply with the Contract Documents and the Building Code.
- Typical details and general notes apply to all parts of the work except where specifically detailed or unless otherwise noted.
- The structural drawings illustrate structural members. Refer to architectural, mechanical, and electrical drawings for non-structural items which require special provisions during the construction of the structural members.
- Drawings are not to be scaled.
- Refer to architectural plans for floor depressions, openings, slopes, drains, curbs, pads, embedded items, non-bearing partitions, etc. Refer to mechanical and electrical plans for sleeves, openings, and hangers for pipes, ducts, and equipment.
- The Contractor shall verify and be responsible for all dimensions and conditions which impact the work. Field verify sizes, elevations, hole locations, etc., prior to fabrication.
- The Contractor shall carefully review the drawings to identify the scope of work required, visit the site to relate the scope of work to existing conditions and determine the extent to which those conditions and physical surroundings will impact the work.
- Existing conditions as shown on these plans are for reference only. The Contractor is required to field verify all existing conditions prior to construction.
- The Contractor shall resolve any conflicts on the drawings or in the specifications with the Architect/Engineer before proceeding with the work.
- Any deviation, modification, or substitution from the approved set of structural drawings shall be submitted to the Owner, Architect, and Engineer for review/approval prior to its use or inclusion on the shop drawings.
- The Contractor shall provide all necessary shores, braces, and guys required to support all loads to which the building structure and components, soils, other structures, and utilities may be subjected during construction. Shoring systems shall be designed, signed, and sealed by a professional engineer licensed in the jurisdiction where the project is located.
- The Contractor shall provide means, method, techniques, sequence, and procedure of construction as required.
- The Contractor shall protect all work, materials, and equipment from damage and shall provide proper storage facilities for materials and equipment during construction.
- Site visits performed by the Architect/Engineer do not include inspections of means and methods of construction performed by the Contractor.
- Structural observations performed by the Architect/Engineer during construction are not the continuous and special inspection services and do not waive the responsibility for the inspections required of the Building Department Inspector or the testing agency. Observations also do not guarantee the Contractor's performance and shall not be considered as supervision of construction.
- The Contractor shall review shop drawings for completeness and compliance with contract documents. The Contractor shall stamp shop drawings prior to submission to the Architect and Engineer.
- Review of the shop drawings by the Architect's Engineers shall not be construed as an authorization to deviate from the Contract Documents.
- Shop drawings will not be processed if they are incomplete, lack coordination with relevant portion of contract documents, lack calculations if required, or if deviations, modifications, and substitutions are indicated without prior written approval from the Architect/Engineer.

STRUCTURAL TESTING AND SPECIAL INSPECTIONS

Special structural testing and inspections are required. The Contractor shall hire an approved independent testing agency. The agency shall be designated as the special inspector and shall provide structural testing and special inspections as required by the building code and as noted in the Contract Documents. Reports of inspection and testing shall be sent to the Architect, Engineer, Owner, Contractor, and Building Department. Structural testing and special inspection shall include:

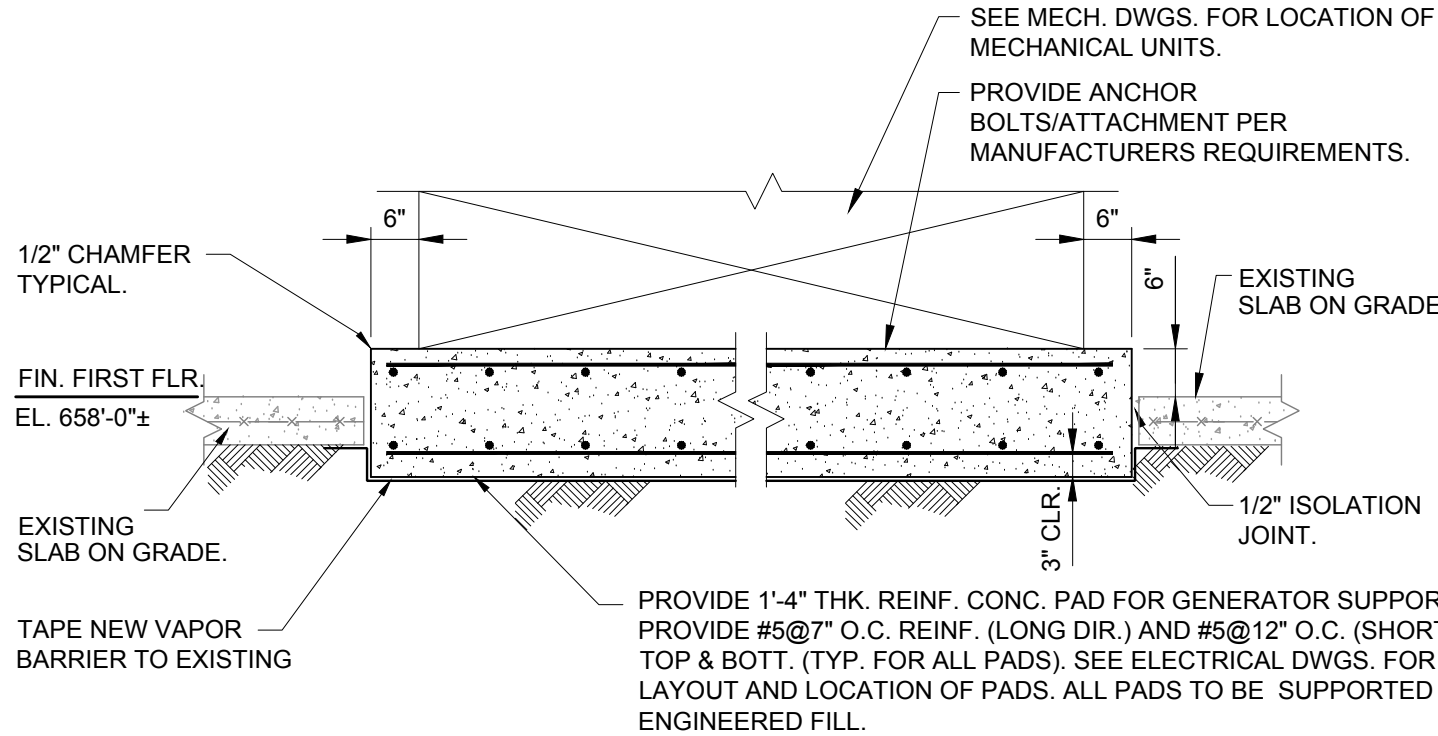
- Concrete: mix data, daily pour reports, cylinder tests, slump, entrained air tests, and temperature. See specifications for all testing and inspection requirements.
- Reinforcement: placement, type, size, and grade of steel. See specifications for all testing and inspection requirements.
- Foundations:
 - Inspect and test bearing surfaces, soil compactions, fill and backfill materials.
 - Inspect all excavations and shoring installations and review backfilling procedures.

FOUNDATIONS, SLABS ON GROUND, RAMPS, AND STEPS

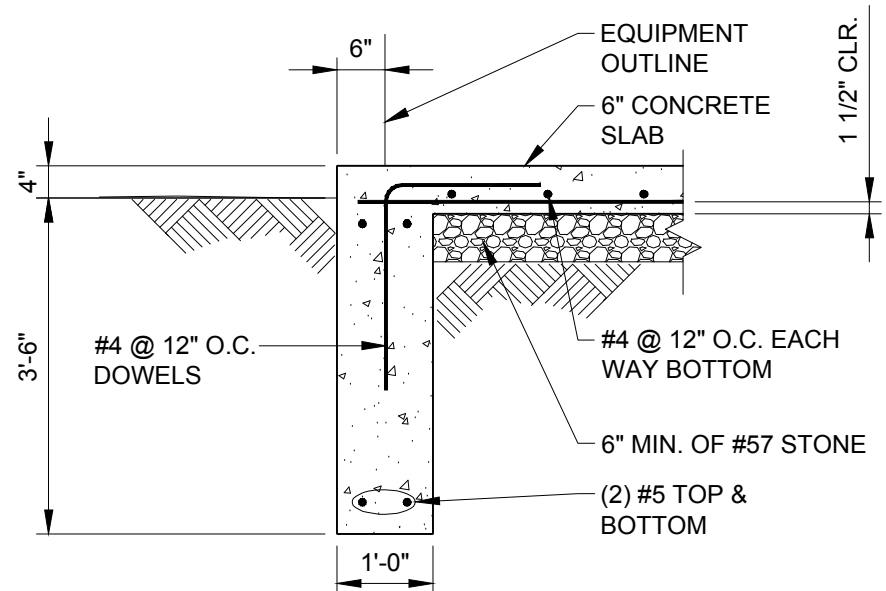
- Foundations for this project are designed with an assumed bearing pressure. Contractor shall hire Geotechnical Engineers for recommendations. All the work regarding site preparation, earth fill construction, backfill requirements, foundation preparations, etc., shall be in strict conformance to the requirements and recommendations of the Geotechnical Engineer's report. The report is part of the Contract Documents.
- Footings and grade beams: Elevations given are to bottom of footings and grade beams.
- All footings must be supported on undisturbed soil capable of achieving the design soil bearing pressure without appreciable settlement. Where additional excavation is required to attain the design bearing pressure, backfill the overexcavated area with lean concrete up to the design bearing elevation.
- Provide (2) #5 minimum continuous in all footings directly under masonry walls.
- Existing foundations:
 - Existing foundations shown on drawings are approximate. Exact conditions must be verified at time of construction.
 - When new footings meet existing footings, they shall be stepped at a ratio of 2 horizontal to 1 vertical.
 - Unless otherwise noted, new footings shall not bear below existing footings.
- Locate existing underground utilities in areas of construction. Coordinate with utility companies for any shut-off requirements of still active lines.
- When excavations approach the ground water level, the water level shall be lowered by an acceptable dewatering system so that the water level is maintained continuously a minimum of 2'-0" below the excavation.
- The bottom of foundations shall be protected against freezing until backfill or other permanent protective cover is in place.

CONCRETE CONSTRUCTION

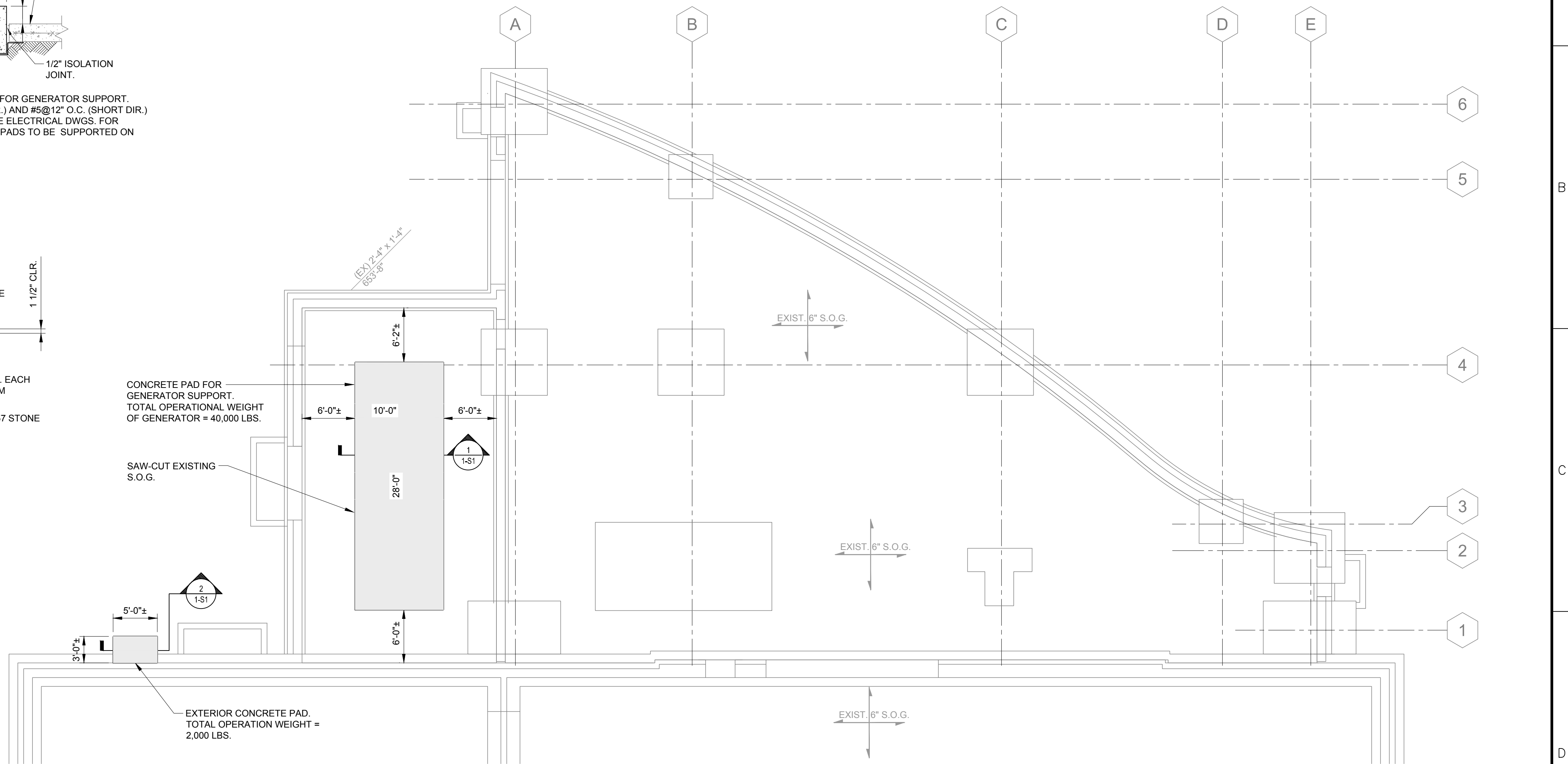
- All concrete construction shall be in accordance with the latest Building Code Requirements for Structural Concrete ACI 318 and ACI Detailing Manual, except that construction and removal of forms and reshoring shall be inspected by the Contractor's engineer.
- Reinforcing steel shall have the following minimum coverage. Place bars as near to the concrete surface as these minima permit wherever possible, unless noted otherwise:
 - Concrete poured against earth: 3"
 - Formed concrete in contact with earth: 2"
- Welded wire reinforcement for slabs on ground shall have a minimum top coverage of 1" and a maximum top coverage of 1 1/2", unless otherwise noted. Reinforcement shall be positively supported and maintained in this position during placement of concrete.
- Welding of reinforcing bars (including tack welding) is not permitted without permission of Engineer in writing. Where and when permitted, welded rebars shall comply with ASTM A706 (Fy=60 ksi) and welding shall conform to AWS D1.4. Welding shall be performed by certified welders.
- Unless noted otherwise in project specifications or drawings, all exposed concrete subjected to freezing and thawing shall have a minimum cement content of 610 pounds per yard, a maximum water/cement ratio of 0.40, and 6%±1% of entrained air.



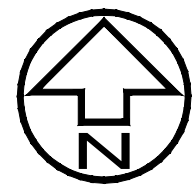
SECTION 1
1/2" = 1'-0"



SECTION 2
1/2" = 1'-0"

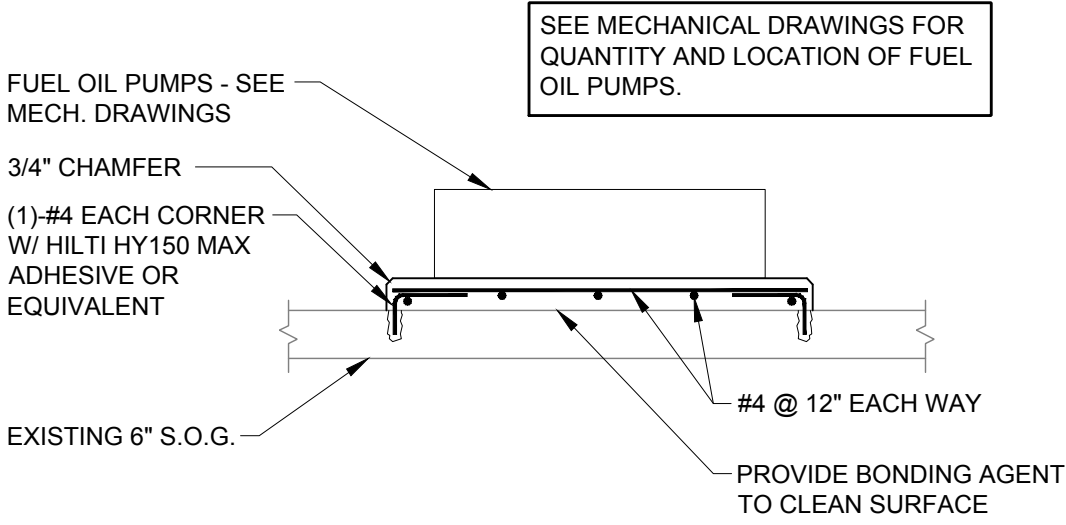


FOUNDATION PLAN
1/8" = 1'-0"



NOTES:

- EXISTING FINISHED FLOOR & REFERENCE ELEVATION IS 658'-0".
- ELEVATIONS GIVEN ARE TO THE BOTTOM OF FOOTINGS.
- EXISTING FOUNDATION SIZE & ELEVATIONS ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
- COORDINATE SIZE & LOCATION OF ALL CONCRETE PADS WITH MANUFACTURER REQUIREMENTS. DIMENSIONS SHOWN ARE APPROXIMATE FOR BID PURPOSES ONLY.



TYPICAL EQUIPMENT PAD DETAIL
1/8" = 1'-0"

CONSULTANTS:

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ARCHITECT:

Perspectus
architecture

13212 Shaker Square Suite 204 Cleveland, Ohio 44120
P. 216.752.1800 F. 216.752.3833

DESIGN AND CONSTRUCTION DOCUMENTS AS INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THESE DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PERSPECTUS ARCHITECTURE.

Drawing Title

FOUNDATION PLAN, SECTIONS & NOTES

Approved: Project Director

Project Title

CHILLER PLANT
GENERATOR &
DISTRIBUTION UPGRADES

Location

VAMC - WADE PARK

Date

04-06-2012

Checked

JMC

Drawn

ETP

Project Number

541-11-108

Building Number

1

Drawing Number

1-S1

Dwg. of

Office of
Facilities
Management



Department of
Veterans Affairs

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| <div><div><div>three inches = one foot</div><div>one and one half inches = one foot</div><div>one inch = one foot</div><div>three quarters inch = one foot</div><div>one half inch = one foot</div><div>three eighths inch = one foot</div><div>one quarter inch = one foot</div><div>one eighth inch = one foot</div></div><div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div><div>F</div></div></div> <div><div><div><div>HVAC GENERAL NOTES:</div><div><p>A. LOCATIONS AND ROUTING OF EXISTING PIPING, DUCTWORK AND EQUIPMENT IS PRESUMED FROM EXISTING DRAWINGS. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL PRIOR TO COMMENCEMENT OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONDITIONS WHICH WILL NOT PERMIT THE WORK TO BE PERFORMED AS INDICATED ON THESE DRAWINGS.</p><p>B. COORDINATE ALL SHUT-DOWNS OF EXISTING MECHANICAL SYSTEMS WITH OWNER A MINIMUM OF TEN WORKING DAYS IN ADVANCE.</p><p>C. PRIOR TO INSTALLATION, VERIFY PRECISE LOCATION OF NEW WALL MOUNTED DEVICES WITH OWNER AND ARCHITECT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR PRECISE LOCATION OF CEILING MOUNTED DEVICES. COORDINATE ROOF MOUNTED EQUIPMENT WITH ARCHITECT PRIOR TO INSTALLATION.</p><p>D. PROVIDE ADEQUATE SERVICE CLEARANCE FOR ALL MECHANICAL EQUIPMENT. REFER TO INSTRUCTIONS FROM THE EQUIPMENT MANUFACTURER. MAINTAIN A MINIMUM OF 18 INCH CLEARANCE AT CONTROLS.</p><p>E. NEW DUCTS OR PIPING SHALL NOT BE ROUTED ABOVE ELECTRICAL PANELS. REFER TO ELECTRICAL DRAWINGS FOR LOCATION OF PANELS.</p><p>F. DAMPERS AND VALVES SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AS CLOSE TO MAIN AS POSSIBLE.</p><p>G. ALL REFRIGERANT PIPING SHALL BE SIZED, SLOPED, TRAPPED, ROUTED AND CHARGED IN STRICT ACCORDANCE WITH WRITTEN INSTRUCTIONS FROM THE EQUIPMENT MANUFACTURER. SIZING AND ROUTING SHOWN ON THE DRAWINGS IS FOR BIDDING PURPOSES ONLY.</p><p>H. IN GENERAL, REFRIGERANT SYSTEMS SHALL BE THOROUGHLY EVACUATED, AND REFRIGERANT CHARGE SHALL BE DETERMINED BY WEIGHT.</p><p>I. NO TEMPERATURE SENSING CONTROL DEVICES SHALL BE LOCATED OVER HEAT PRODUCING DEVICES.</p><p>J. INSTALL ALL EQUIPMENT TO BE DEAD LEVEL.</p><p>K. THE MAJORITY OF EXISTING CONSTRUCTION IS CONCRETE JOISTS AND BEAMS AT IRREGULAR SPACING. WHERE NEW OPENINGS ARE BEING CREATED, THE CONTRACTOR SHALL OFFSET/TRANSITION AS NECESSARY TO CONTAIN PIPE WITHIN VOID SPACE BETWEEN JOISTS. OFFSETS MAY BE NECESSARY WITHIN SHAFTS.</p><p>L. EXTREMELY TIGHT CLEARANCES OCCUR IN THE EXISTING BUILDING, SPECIFICALLY THE SUB-BASEMENT. CONTRACTOR SHALL PREPARE PIPING COORDINATION DRAWINGS FOR APPROVAL PRIOR TO FABRICATION/INSTALLATION. COORDINATE WITH ALL OTHER TRADES.</p></div></div></div><div><div><div><div>MECHANICAL SYMBOLS:</div><div><div><div>CALL OUTS:</div><div><div><div><div><div><div>REFERENCE TO CODED NOTE</div></div><div><div>REFERENCE TO GENERAL NOTE</div></div><div><div>EQUIPMENT OR FIXTURE MARK</div></div><div><div>UNIT NUMBER</div></div><div><div>DETAIL NO.</div></div><div><div>SECTION/DETAIL/ELEVATION MARK</div></div><div><div>DRAWING</div></div></div></div><div><div>ABBREVIATIONS:</div><div><div>R.O. ROOF OPENING</div><div>C.T.E. CONNECT TO EXISTING</div><div>P.C. PLUMBING CONTRACTOR</div><div>F.C. FIRE SUPPRESSION CONTRACTOR</div><div>H.C. HVAC CONTRACTOR</div><div>T.C. TEMPERATURE CONTROL CONTRACTOR</div><div>G.C. GENERAL TRADES CONTRACTOR</div><div>E.C. ELECTRICAL CONTRACTOR</div><div>T.P.C. TEMPERATURE CONTROL PANEL</div><div>S.A. SUPPLY AIR</div><div>R.A. RETURN AIR</div><div>E.A. EXHAUST AIR</div><div>A.F.F. ABOVE FINISHED FLOOR</div><div>A.D. ACCESS DOOR</div><div>T.O. OPENING IN TOP OF DUCT. SHALL BE A MINIMUM 1.5 TIMES GREATER THAN THE CROSS-SECTIONAL AREA OF DUCT.</div><div>M.O.D. MOTORIZED 2-WAY CONTROL VALVE</div><div>F.S.D. COMBINATION FIRE/SMOKE DAMPER IN DUCT</div><div>R.D. ROOF DRAIN</div><div>F.D. FLOOR DRAIN</div><div>N.C. NORMALLY CLOSED</div><div>N.O. NORMALLY OPEN</div></div></div><div><div>HVAC CONTROLS:</div><div><div><div><div><div>MANUAL OVERRIDE</div></div><div><div>INDICATES POINT OF CONNECTION</div></div><div><div>STATIC PRESSURE SENSOR</div></div><div><div>CURRENT TRANSFORMER ON MOTOR WIRING WITH TRANSDUCER</div></div><div><div>VFD VARIABLE FREQUENCY DRIVE FOR MOTOR</div></div></div></div><div><div>DUCTWORK SYMBOLS:</div><div><div><div><div><div>RECTANGULAR DUCT SIZE</div></div><div><div>ROUND DUCT SIZE</div></div><div><div>MANUAL BALANCING DAMPER ON DUCT TO BE MOUNTED OVER ACCESSIBLE CEILING</div></div><div><div>SUPPLY AIR DUCT</div></div><div><div>RETURN AIR DUCT</div></div><div><div>EXHAUST AIR DUCT</div></div></div></div><div><div>DEMOLITION SYMBOLS:</div><div><div><div><div><div>X EXISTING TO REMAIN</div></div><div><div>XR EXISTING TO BE REMOVED</div></div><div><div>XRL EXISTING TO BE RELOCATED</div></div></div></div></div></div><div><div><div>HVAC PIPING:</div><div><div><div><div>HEIGHT OF BOTTOM OF PIPE ABOVE FLOOR</div></div><div><div>CONDENSATE PIPING</div></div><div><div>NATURAL GAS</div></div><div><div>FIRE SUPPRESSION PIPE</div></div><div><div>HPS HIGH PRESSURE STEAM</div></div><div><div>MPS MEDIUM PRESSURE STEAM</div></div><div><div>MPC MEDIUM PRESSURE STEAM CONDENSATE</div></div><div><div>LPS LOW PRESSURE STEAM</div></div><div><div>LPC LOW PRESSURE STEAM CONDENSATE</div></div><div><div>SC STEAM CONDENSATE</div></div><div><div>CS CONDENSER WATER SUPPLY</div></div><div><div>CR CONDENSER WATER RETURN</div></div><div><div>HHWS HEATING HOT WATER SUPPLY</div></div><div><div>HHWR HEATING HOT WATER RETURN</div></div><div><div>PCWS PROCESS CHILLED WATER SUPPLY</div></div><div><div>PCWR PROCESS CHILLED WATER RETURN</div></div><div><div>CHWS CHILLED WATER SUPPLY</div></div><div><div>CHWR CHILLED WATER RETURN</div></div><div><div>ACC AIR CONDITIONING CONDENSATE</div></div><div><div>DRAIN</div></div><div><div>VENT LINE</div></div><div><div>FOS FUEL OIL SUPPLY</div></div><div><div>FOR FUEL OIL RETURN</div></div><div><div>VALVE</div></div><div><div>CHECK VALVE</div></div><div><div>SOLENOID VALVE (TWO POSITION)</div></div><div><div>UNION</div></div><div><div>REDUCER</div></div><div><div>TRIPLE DUTY VALVE (SHUTOFF, BALANCE, CHECK)</div></div><div><div>STRAINER</div></div><div><div>BALANCING VALVE</div></div><div><div>FLEXIBLE PIPE CONNECTOR</div></div><div><div>THERMOMETER IN PIPE WELL</div></div><div><div>PIPE GUIDE</div></div><div><div>PIPE EXPANSION ANCHOR</div></div><div><div>E.L. 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NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.



1. ANY HEIGHT ABOVE 6'-0" (1830 MM) WILL REQUIRE BRACING.
2. ALL GENERATOR EXHAUST PIPE AND FIXTURES SHALL BE INSULATED

NTS



1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.



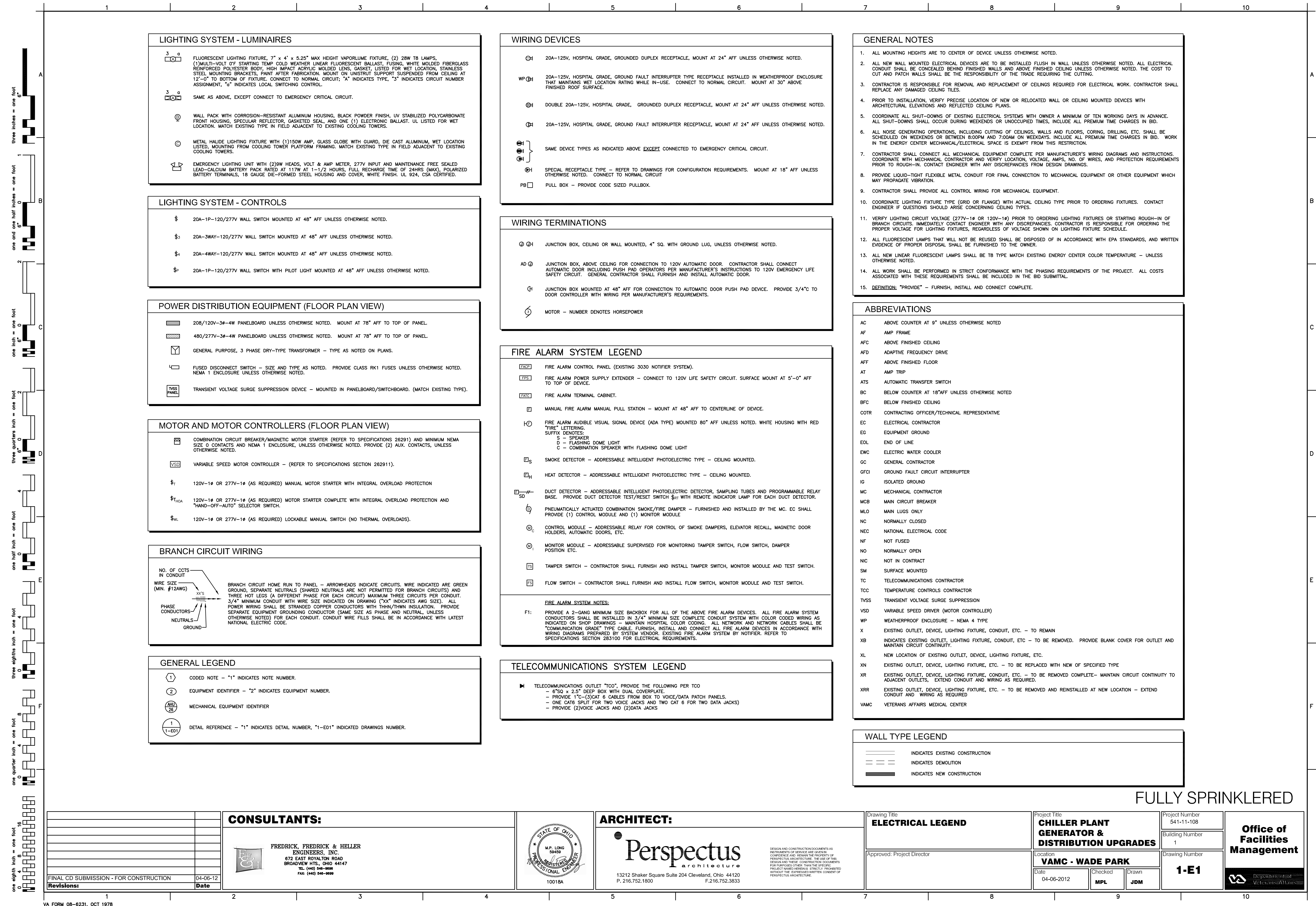
1. VENT ALL HIGH POINTS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO DRAIN



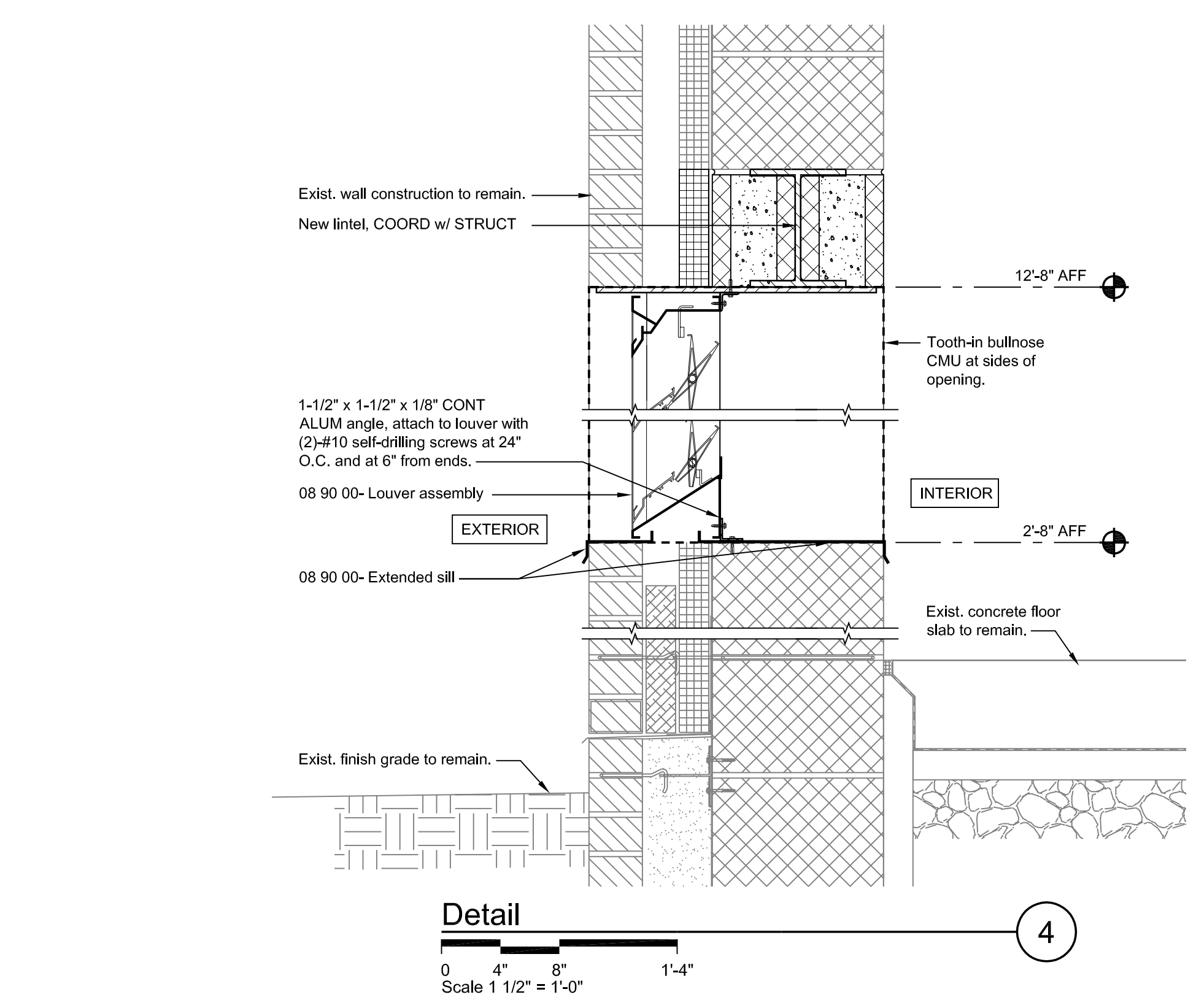
1. VERTICAL SUPPORT ATTACHMENT PLATE (TUNNEL ROOF PLATE SIMILAR.)
2. HORIZONTAL ATTACHMENT PLATE, SECURE TO WALL W/ (4) 3/4" CONCRETE INSERTS BY 4" LONG.
3. SUPPORT SPACING IS 10'-0". REFER TO PLAN.
4. THE SUPPORTS SHALL BE SUBMITTED AS SHOP DRAWINGS AND SHALL BE REVIEWED BY THE REGISTERED STRUCTURAL ENGINEER.

NTS

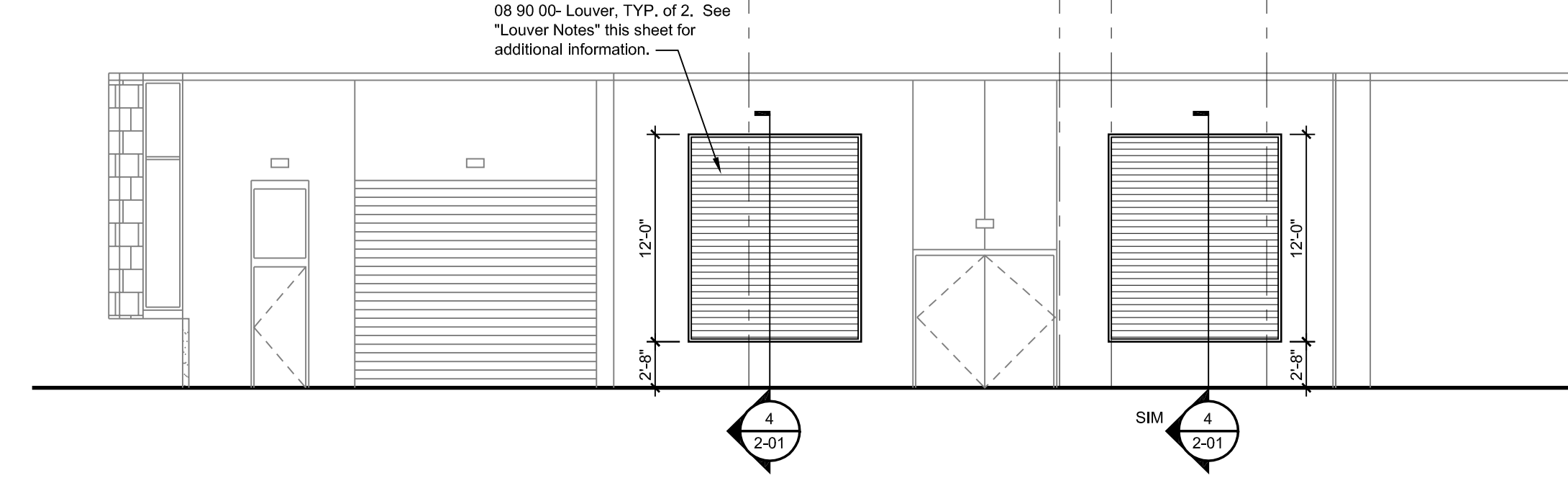
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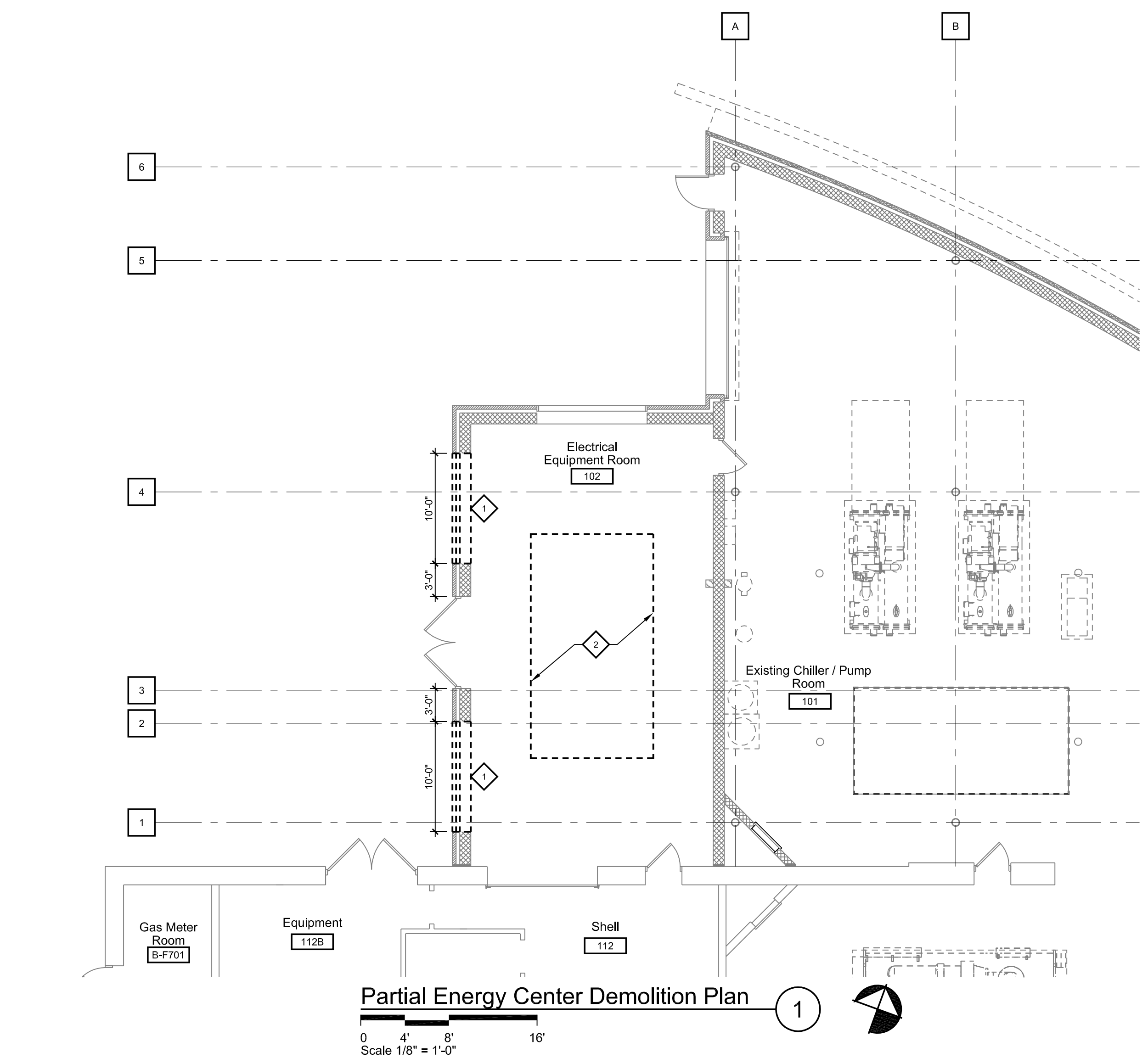
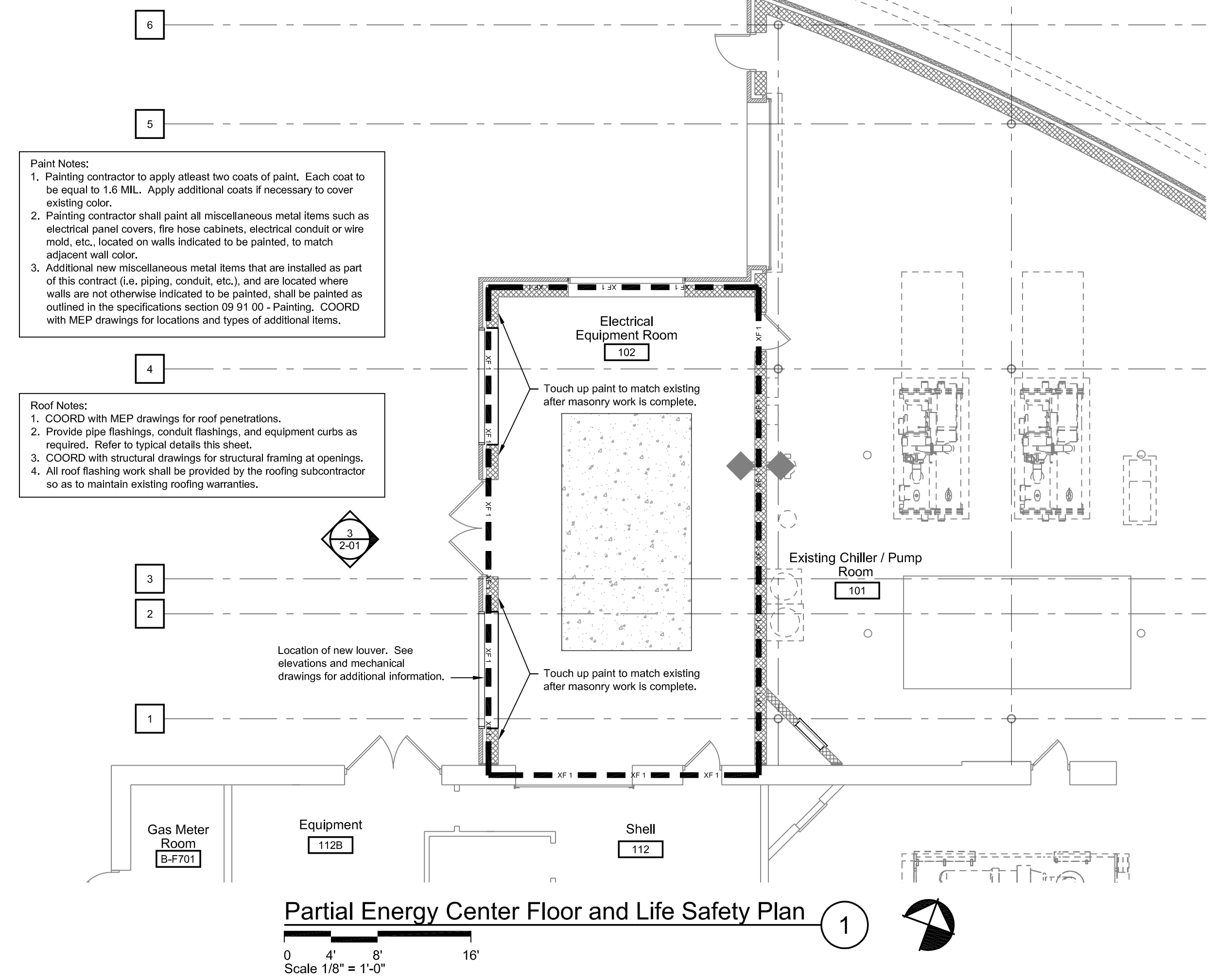
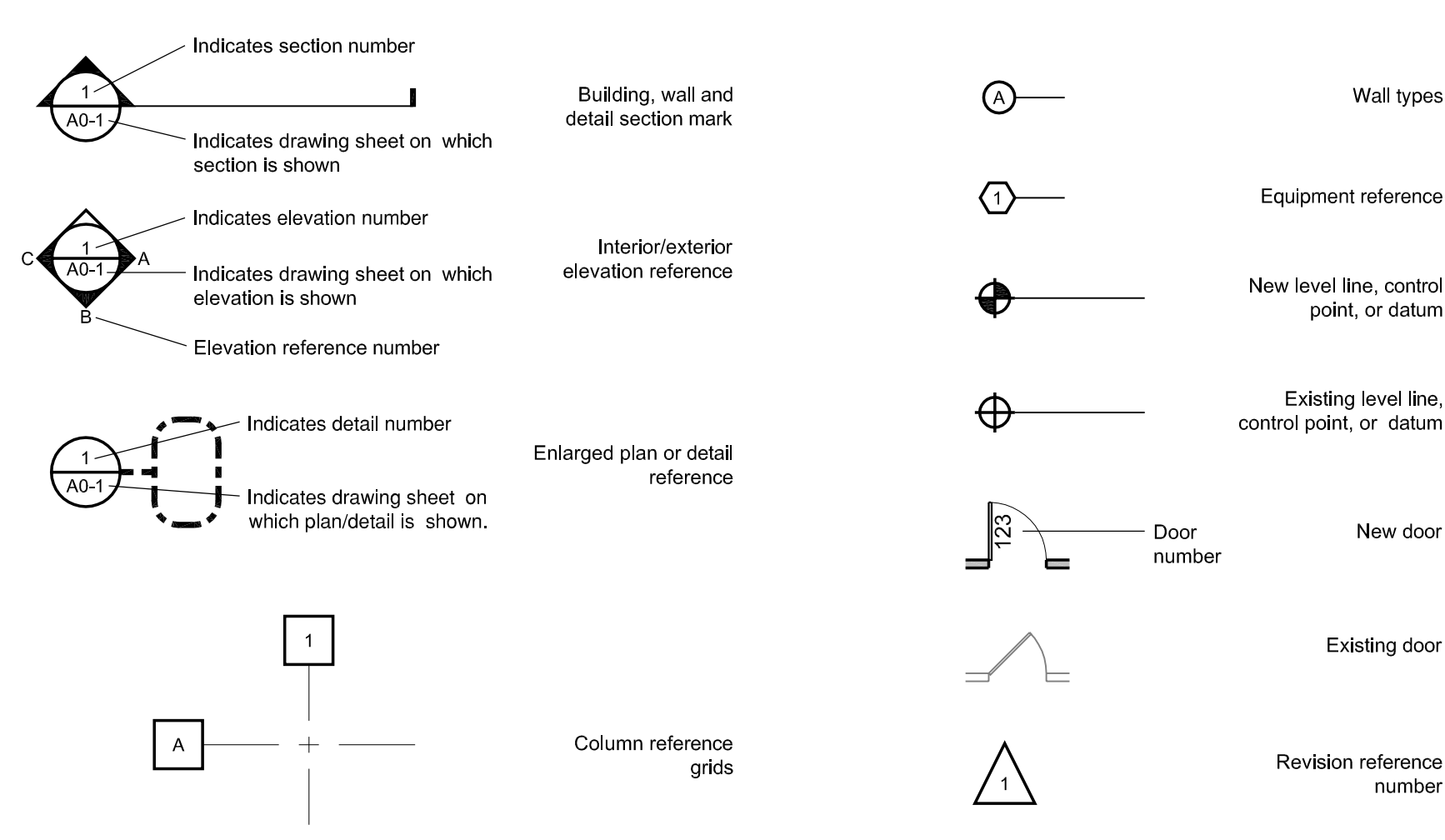
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
one eighth inch = one foot
one quarter inch = one foot
one eighth inch = one foot



- LOUVER NOTES:**
- New louvers shall be as follows:
 - Extruded ALUM combination louver with stationary drainable front blades
 - Integral flange frame construction
 - Filter rack
 - Bird screen



SYMBOLS



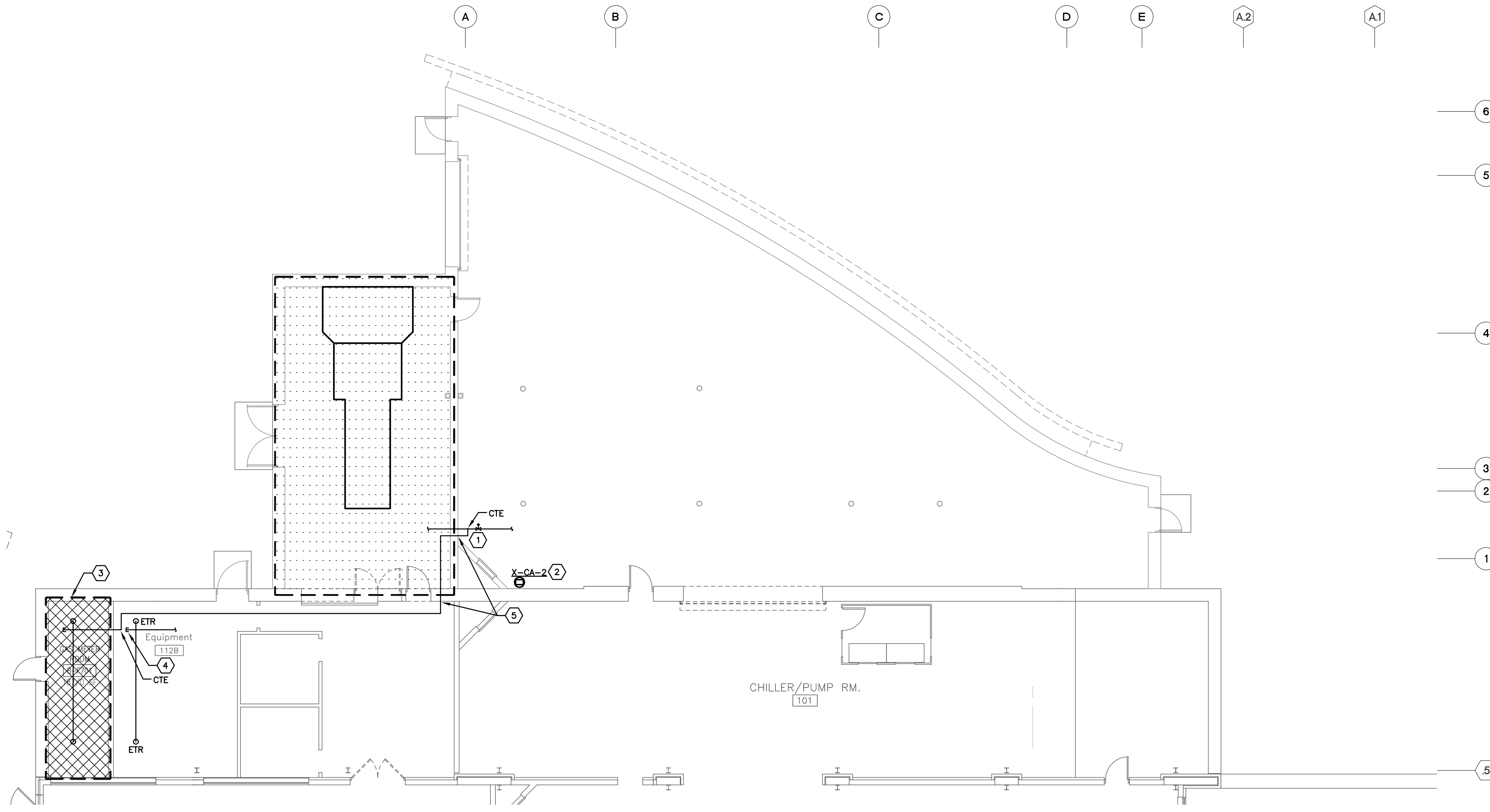
- LIFE SAFETY PLAN LEGEND:**
- XF 1 ■ EXISTING 1 HR FIRE BARRIER
 - ◆ EXISTING FIRE EXTINGUISHER CABINET
- LIFE SAFETY PLAN GENERAL NOTES:**
- SEE COVER SHEET FOR APPLICABLE CODE INFORMATION.
 - CONTRACTOR SHALL INFORM ARCHITECT AND OWNER IMMEDIATELY OF ANY DISCREPANCIES IN EXISTING RATED WALL CONSTRUCTION AND NON-CONFORMING PENETRATIONS.
 - MODIFY EXISTING WALLS WITHIN PROJECT SCOPE TO BE IN COMPLIANCE WITH REQUIRED FIRE & SMOKE RATINGS.

- DEMOLITION GENERAL NOTES:**
- Refer to specifications section 02 41 00 "Selective Demolition" for additional requirements and information.
 - Contractor shall coordinate all demolition with the entire set of contract documents for full scope of demolition work required for the project.
 - The contractor shall verify all existing conditions, dimensions, and materials required for the contracted work. Report all discrepancies to the architect prior to fabrication, erection, and/or installation.
 - Coordinate all new penetrations and/or openings with other associated trades.
 - The owner may select and tag items for demolition to be salvaged. Contractor shall remove selected items from the project scope area and deliver to the owner's requested location within the existing facility.
 - Contractor shall provide temporary dust proof barriers with dust removing walk off mat (buddy mat) at contractor access points to separate project scope area from occupied areas. Coordinate barrier locations with existing ceiling lights and other ceiling devices.
 - Contractor shall provide hepa filtered negative air machine(s) to maintain negative pressure to project scope area ensuring no dust will be transferred to occupied areas. Provide visual pressure monitoring device at dust proof barricade to confirm pressure. Dust monitoring shall be by owner. See specification 01 00 00 - General Requirements - Infection Prevention Measures.
 - The hospital's smoke and fire suppression system shall remain in operation within the project scope area during the entire construction phase.
- DEMOLITION PLAN LEGEND:**
- Existing to remain
 - Existing to be removed
 - Number represents coded demolition note.
- NOTES:**
- See mechanical drawings for plumbing, hvac and fire protection demolition.
 - See electrical drawings for power, lighting and communications demolition.
- Remove portion of wall as required for new opening. Patch and prepare adjacent surfaces to match existing or scheduled finish. Tooth-in block and/or brick to match existing adjacent surfaces. Provide bulhose units for all exposed CMU vertical edges of openings. Temporarily protect adjacent occupied areas until work is completed.
 - Saw cut and remove existing concrete slab on grade for new equipment pad. Coordinate exact size and location with MEP drawings. See structural drawings for additional information.

FULLY SPRINKLERED

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|---|--|--|--|---|--|-----------------------|--|--|--|
| CONSULTANTS: | | ARCHITECT: | | Project Title | | Project Number | | Office of Facilities Management | |
| FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL: (440) 546-9696 FAX: (440) 546-9699 | | Perspectus architect 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F. 216.752.3833 | | CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES | | 541-11-108 | | Department of Veterans Affairs | |
| FINAL CD SUBMISSION - FOR CONSTRUCTION | | Approved: Project Director | | Location | | Building Number | | 2-01 | |
| Revisions: | | Date | | VAMC - WADE PARK | | 1 | | Dwg. of | |
| 04-06-12 | | 04-06-12 | | Date | | Checked | | Drawn | |
| | | | | 04-06-12 | | TEH | | CAL | |

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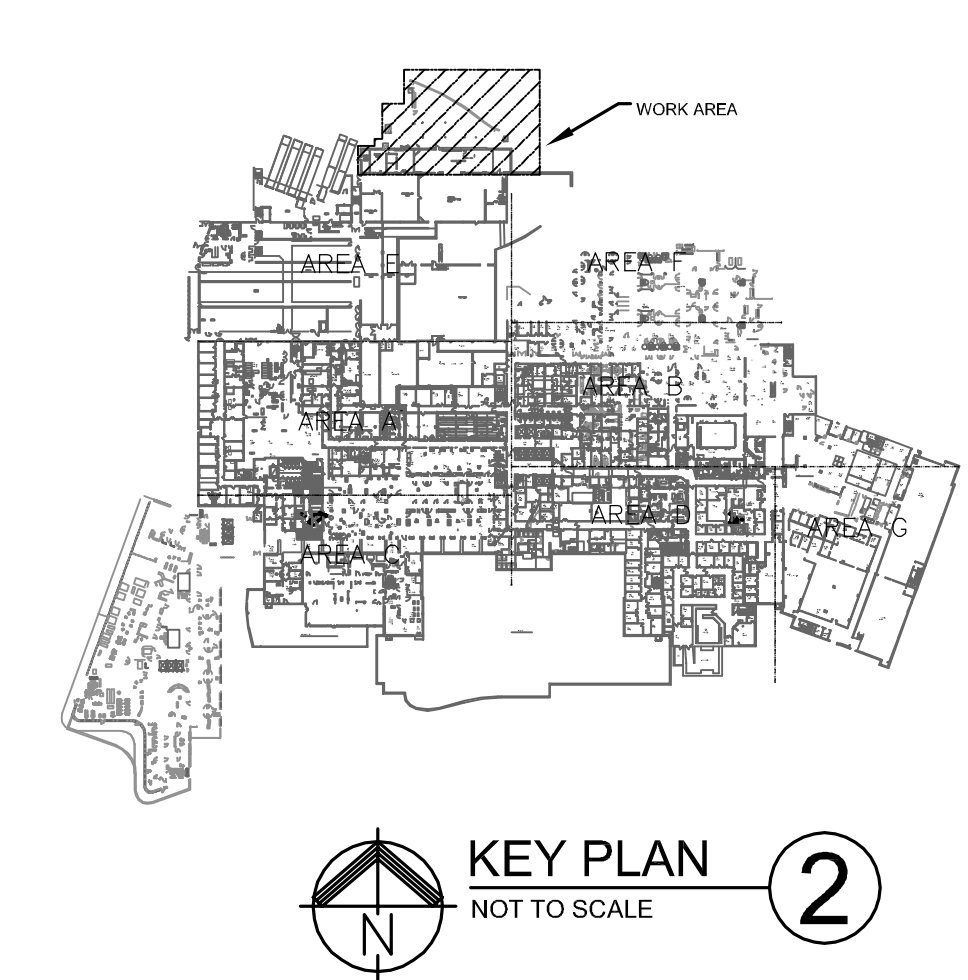


ENERGY CENTER FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"
0' 4' 8' 16' 32'

- CODED NOTES:**
- 1 EXISTING DRY VALVE
 - 2 EXISTING DRY SYSTEM COMPRESSOR
 - 3 CONVERT THE EXISTING WET SPRINKLER SYSTEM IN THE GAS METER ROOM TO A DRY SYSTEM, IN ACCORDANCE WITH NFPA. TIE INTO THE EXISTING 2" PIPE SERVING THE GENERATOR ROOM DOWNSTREAM OF THE EXISTING DRY PIPE VALVE. PROVIDE DRAINS, VALVES, AND GAUGES IN ACCORDANCE WITH NFPA.
 - 4 CUT AND CAP SECTION OF EXISTING MAIN BRANCH SERVING GAS METER ROOM.
 - 5 CORE DRILL AND FIRESTOP PENETRATION.

- FIRE SUPPRESSION LEGEND**
- REWORK EXISTING DRY TYPE SPRINKLER SYSTEM PIPING AND HEADS IN OUTLINED AREA TO ACCOMMODATE NEW PIPING AND EQUIPMENT SERVING NEW GENERATOR ROOM. REVISE LAYOUT, ADD HEADS, AND REWORK PIPING AS REQUIRED FOR NEW PIPE AND EQUIPMENT. DESIGN TO ORDINARY HAZARD GROUP 2.
 - MODIFY EXISTING SYSTEM TO PROVIDE DRY TYPE SPRINKLER SYSTEM TO SERVE THE GAS METER ROOM. REVISE LAYOUT, REPLACE HEADS, AND REWORK PIPING AS REQUIRED TO CONVERT TO A DRY SYSTEM. DESIGN TO ORDINARY HAZARD GROUP 2.

- FIRE SUPPRESSION GENERAL NOTES:**
- A. LOCATIONS AND ROUTING OF EXISTING PIPING, DUCTWORK AND EQUIPMENT IS PRESUMED FROM EXISTING DRAWINGS. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL PRIOR TO COMMENCEMENT OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONDITIONS WHICH WILL NOT PERMIT THE WORK TO BE PERFORMED AS INDICATED ON THESE DRAWINGS.
 - B. COORDINATE ALL SHUT-DOWNS OF EXISTING MECHANICAL SYSTEMS WITH OWNER A MINIMUM OF TEN WORKING DAYS IN ADVANCE.
 - C. PRIOR TO INSTALLATION, VERIFY PRECISE LOCATION OF NEW WALL MOUNTED DEVICES WITH OWNER AND ARCHITECT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR PRECISE LOCATION OF CEILING MOUNTED DEVICES.
 - D. PROVIDE ADEQUATE SERVICE CLEARANCE FOR ALL MECHANICAL EQUIPMENT. REFER TO INSTRUCTIONS FROM THE EQUIPMENT MANUFACTURER.
 - E. NEW PIPING SHALL NOT BE ROUTED ABOVE ELECTRICAL PANELS. REFER TO ELECTRICAL DRAWINGS FOR LOCATION OF PANELS.
 - F. THE FIRE SUPPRESSION CONTRACTOR SHALL PROVIDE DETAILED DESIGN OF THE SPRINKLER SYSTEM. REFER TO SPECIFICATIONS.
 - G. THE FIRE PROTECTION SYSTEM IS PERFORMANCE SPECIFIED. ALL SPRINKLER PIPE SIZES SHALL BE DETERMINED BY FIRE PROTECTION CONTRACTOR, BASED ON HYDRAULIC CALCULATIONS.
 - H. CONTRACTOR IS RESPONSIBLE TO SUBMIT THEIR FIRE PROTECTION SHOP DRAWINGS TO OWNERS INSURANCE UNDERWRITER AND LOCAL FIRE MARSHAL AND OBTAIN APPROVAL PRIOR TO STARTING WORK.
 - I. PROVIDE SUPPLEMENTAL DRAINS AS NECESSARY TO PROVIDE 100% SYSTEM DRAINAGE. LOCATE DRAINS ABOVE ACCESSIBLE CEILINGS.
 - J. REFER TO ARCHITECTURAL PLANS FOR EXACT PHASING REQUIREMENTS.

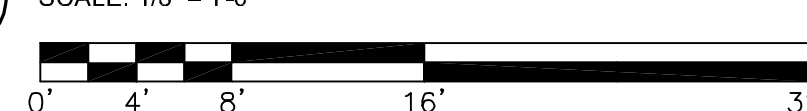


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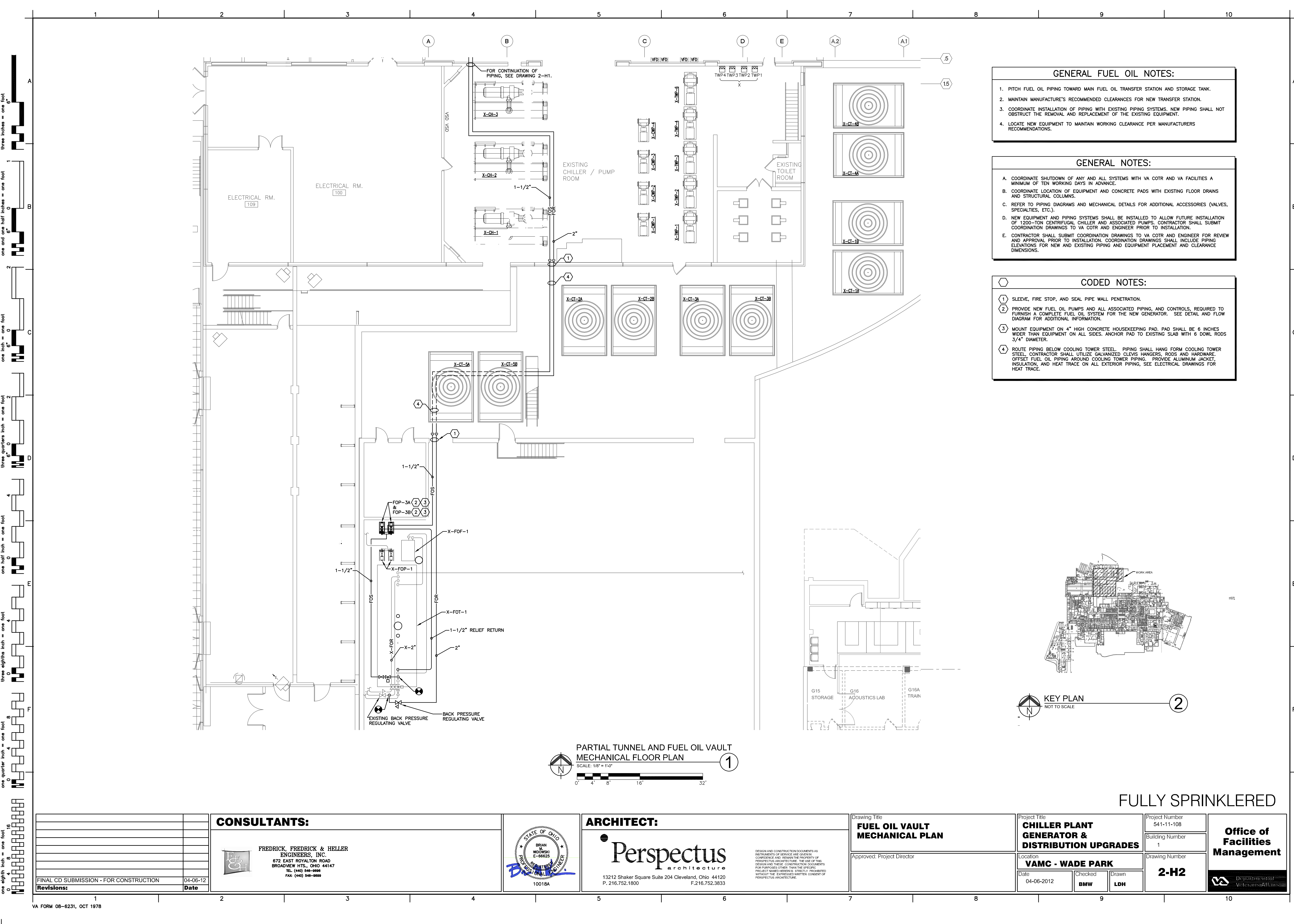
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|---|--|--|--|---|---|--|--|
| CONSULTANTS: FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL (440) 546-9888 FAX (440) 546-9899 | | | ARCHITECT: 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F. 216.752.3833 <small>DESIGN AND CONSTRUCTION DOCUMENTS AS INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PERSPECTUS ARCHITECTURE.</small> | Drawing Title ENERGY CENTER FIRE PROTECTION PLAN Approved: Project Director | Project Title CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES Location VAMC - WADE PARK Date 04-06-2012 Checked BMW Drawn DAD | Project Number 541-11-108 Building Number 1 Drawing Number 2-FP1 | Office of Facilities Management |
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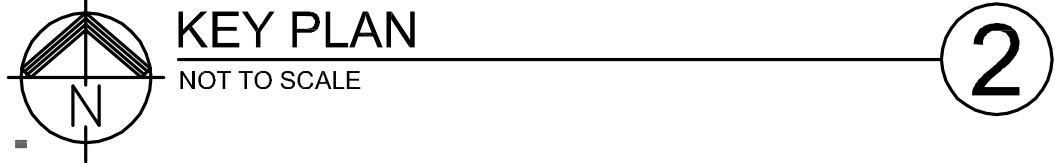
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- GENERAL FUEL OIL NOTES:**
1. PITCH FUEL OIL PIPING TOWARD MAIN FUEL OIL TRANSFER STATION AND STORAGE TANK.
 2. MAINTAIN MANUFACTURE'S RECOMMENDED CLEARANCES FOR NEW TRANSFER STATION.
 3. COORDINATE INSTALLATION OF PIPING WITH EXISTING PIPING SYSTEMS. NEW PIPING SHALL NOT OBSTRUCT THE REMOVAL AND REPLACEMENT OF THE EXISTING EQUIPMENT.
 4. LOCATE NEW EQUIPMENT TO MAINTAIN WORKING CLEARANCE PER MANUFACTURERS RECOMMENDATIONS.

- GENERAL NOTES:**
- A. COORDINATE SHUTDOWN OF ANY AND ALL SYSTEMS WITH VA COTR AND VA FACILITIES A MINIMUM OF TEN WORKING DAYS IN ADVANCE.
 - B. COORDINATE LOCATION OF EQUIPMENT AND CONCRETE PADS WITH EXISTING FLOOR DRAINS AND STRUCTURAL COLUMNS.
 - C. REFER TO PIPING DIAGRAMS AND MECHANICAL DETAILS FOR ADDITIONAL ACCESSORIES (VALVES, SPECIALTIES, ETC.).
 - D. NEW EQUIPMENT AND PIPING SYSTEMS SHALL BE INSTALLED TO ALLOW FUTURE INSTALLATION OF 1200-TON CENTRIFUGAL CHILLER AND ASSOCIATED PUMPS. CONTRACTOR SHALL SUBMIT COORDINATION DRAWINGS TO VA COTR AND ENGINEER PRIOR TO INSTALLATION.
 - E. CONTRACTOR SHALL SUBMIT COORDINATION DRAWINGS TO VA COTR AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. COORDINATION DRAWINGS SHALL INCLUDE PIPING ELEVATIONS FOR NEW AND EXISTING PIPING AND EQUIPMENT PLACEMENT AND CLEARANCE DIMENSIONS.

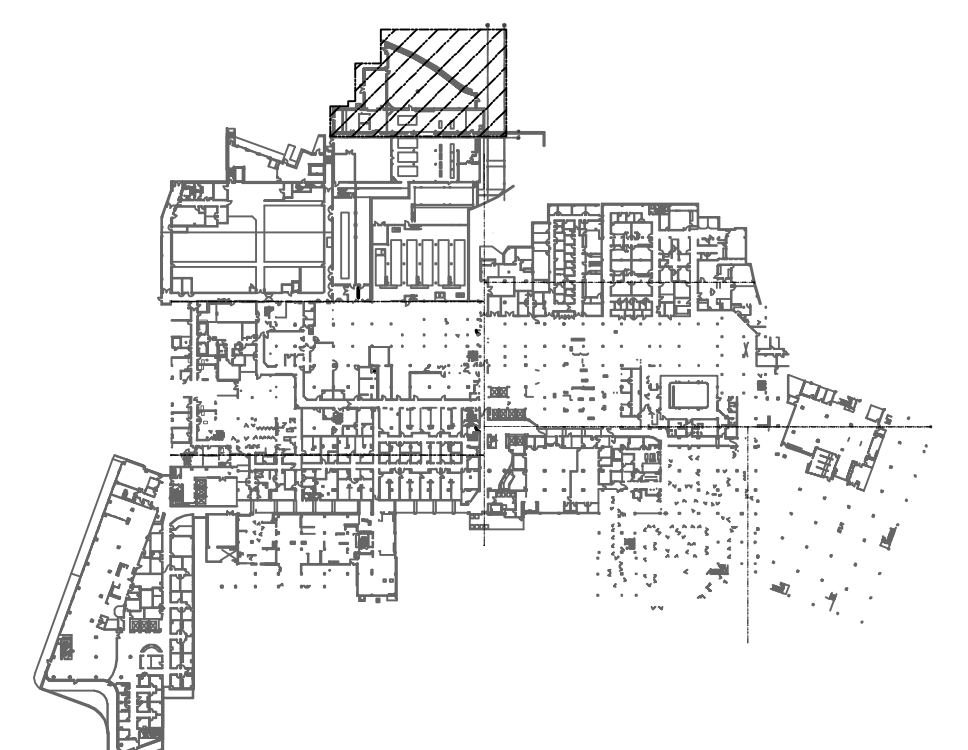
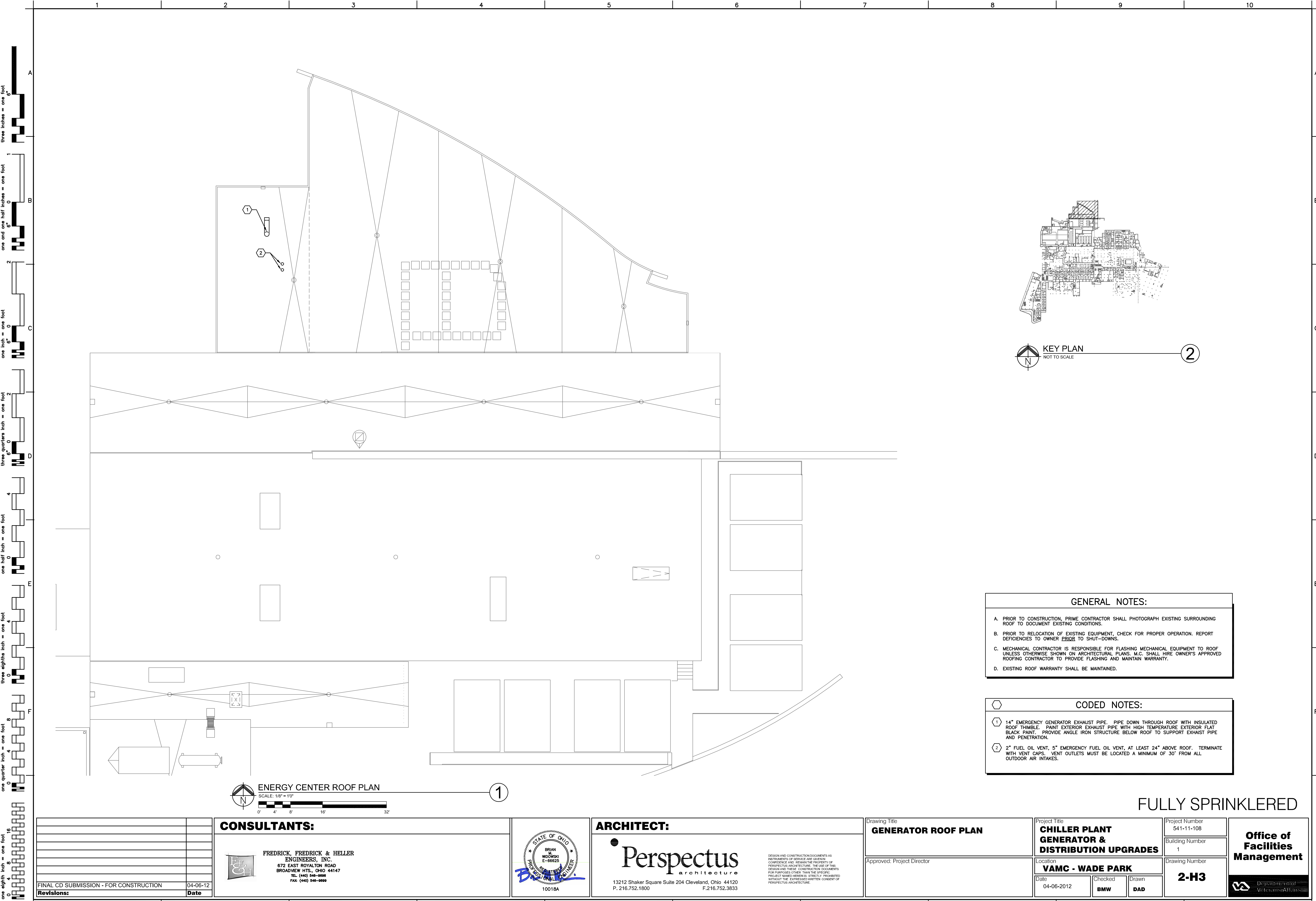
- CODED NOTES:**
- 1 SLEEVE, FIRE STOP, AND SEAL PIPE WALL PENETRATION.
 - 2 PROVIDE NEW FUEL OIL PUMPS AND ALL ASSOCIATED PIPING, AND CONTROLS, REQUIRED TO FURNISH A COMPLETE FUEL OIL SYSTEM FOR THE NEW GENERATOR. SEE DETAIL AND FLOW DIAGRAM FOR ADDITIONAL INFORMATION.
 - 3 MOUNT EQUIPMENT ON 4" HIGH CONCRETE HOUSEKEEPING PAD. PAD SHALL BE 6 INCHES WIDER THAN EQUIPMENT ON ALL SIDES. ANCHOR PAD TO EXISTING SLAB WITH 6 DOWL RODS 3/4" DIAMETER.
 - 4 ROUTE PIPING BELOW COOLING TOWER STEEL. PIPING SHALL HANG FROM COOLING TOWER STEEL. CONTRACTOR SHALL UTILIZE GALVANIZED CLEVIS HANGERS, RODS AND HARDWARE. OFFSET FUEL OIL PIPING AROUND COOLING TOWER PIPING. PROVIDE ALUMINUM JACKET, INSULATION, AND HEAT TRACE ON ALL EXTERIOR PIPING, SEE ELECTRICAL DRAWINGS FOR HEAT TRACE.



PARTIAL TUNNEL AND FUEL OIL VAULT MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"
0' 4' 8' 16' 32'

FULLY SPRINKLERED

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| CONSULTANTS: FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL (440) 546-9088 FAX (440) 546-9099 | | ARCHITECT: Perspectus 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F.216.752.3833 | | Drawing Title FUEL OIL VAULT MECHANICAL PLAN | | Project Title CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES | | Project Number 541-11-108 | | Office of Facilities Management | |
| Revisions: | | Approved: Project Director | | Location VAMC - WADE PARK | | Building Number 1 | | Drawing Number 2-H2 | | Department of Veterans Affairs | |
| 04-06-12 | | | | Date | | Checked | | Drawn | | | |
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KEY PLAN
NOT TO SCALE

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GENERAL NOTES:

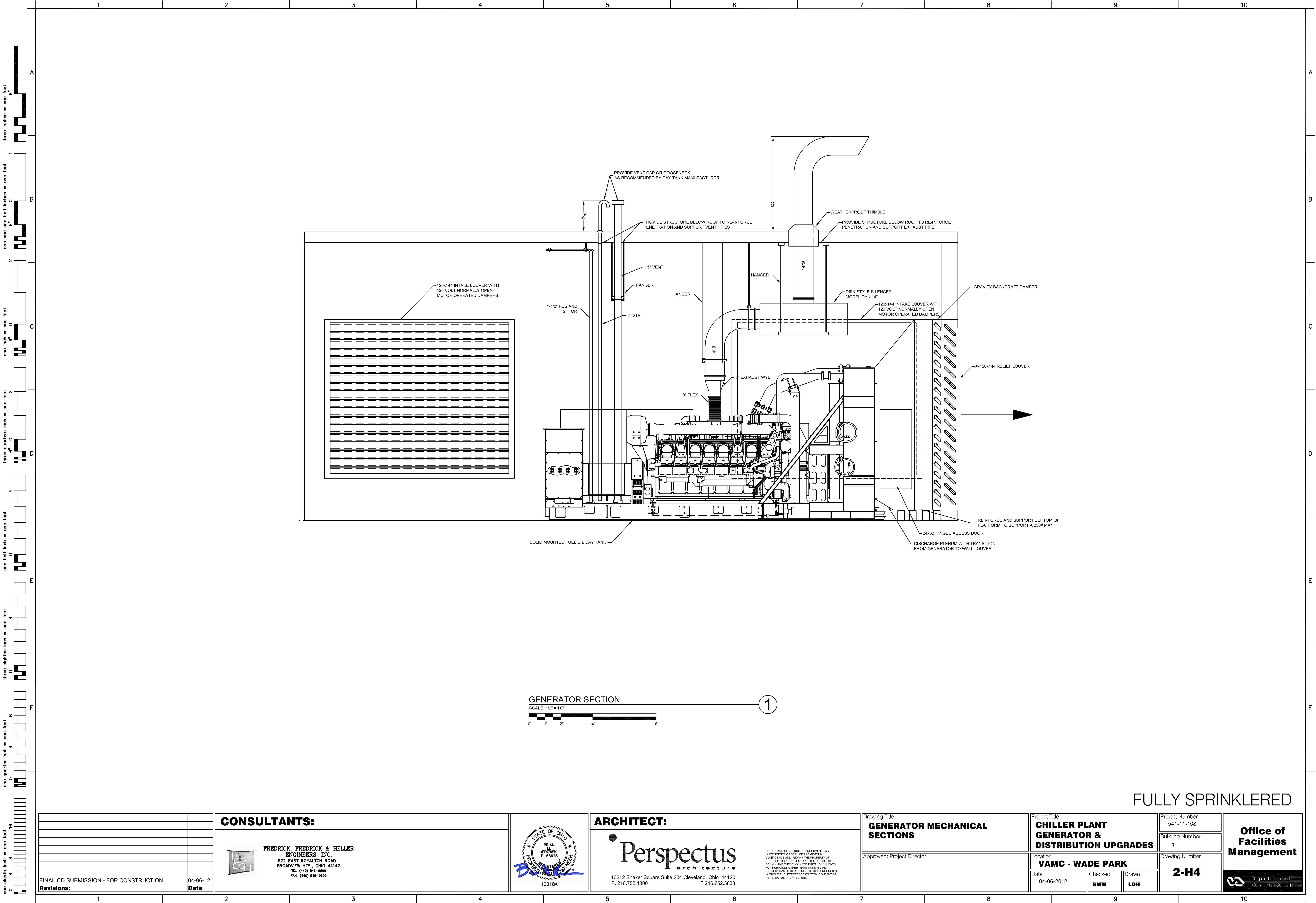
- A. PRIOR TO CONSTRUCTION, PRIME CONTRACTOR SHALL PHOTOGRAPH EXISTING SURROUNDING ROOF TO DOCUMENT EXISTING CONDITIONS.
- B. PRIOR TO RELOCATION OF EXISTING EQUIPMENT, CHECK FOR PROPER OPERATION. REPORT DEFICIENCIES TO OWNER PRIOR TO SHUT-DOWNS.
- C. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR FLASHING MECHANICAL EQUIPMENT TO ROOF UNLESS OTHERWISE SHOWN ON ARCHITECTURAL PLANS. M.C. SHALL HIRE OWNER'S APPROVED ROOFING CONTRACTOR TO PROVIDE FLASHING AND MAINTAIN WARRANTY.
- D. EXISTING ROOF WARRANTY SHALL BE MAINTAINED.

CODED NOTES:

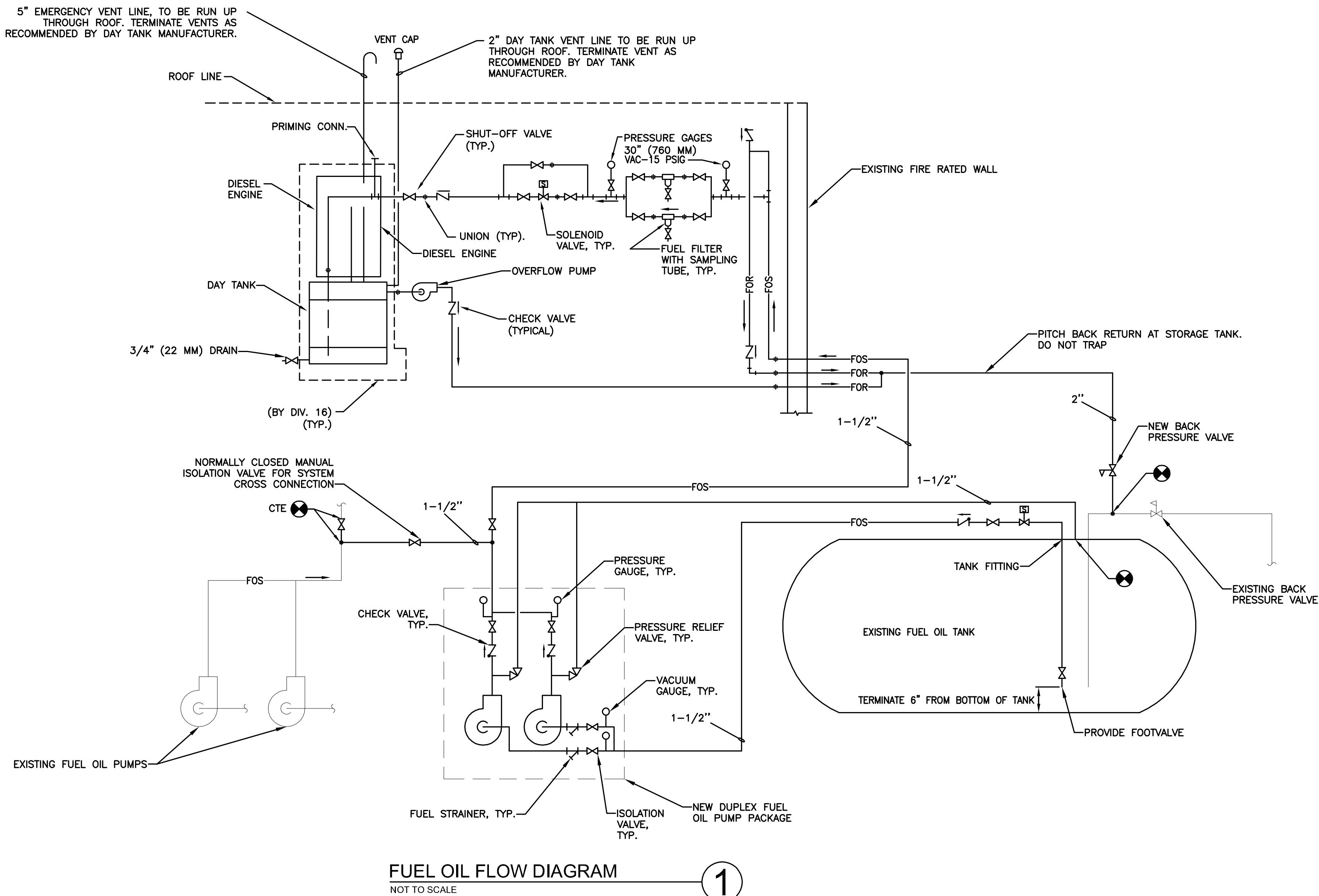
- 1 14" EMERGENCY GENERATOR EXHAUST PIPE. PIPE DOWN THROUGH ROOF WITH INSULATED ROOF THIMBLE. PAINT EXTERIOR EXHAUST PIPE WITH HIGH TEMPERATURE EXTERIOR FLAT BLACK PAINT. PROVIDE ANGLE IRON STRUCTURE BELOW ROOF TO SUPPORT EXHAUST PIPE AND PENETRATION.
- 2 2" FUEL OIL VENT, 5" EMERGENCY FUEL OIL VENT, AT LEAST 24" ABOVE ROOF. TERMINATE WITH VENT CAPS. VENT OUTLETS MUST BE LOCATED A MINIMUM OF 30' FROM ALL OUTDOOR AIR INTAKES.

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FULLY SPRINKLERED



EMERGENCY GENERATOR MONITORING AND TEMPERATURE CONTROL SEQUENCE OF OPERATIONS

- SEQUENCE OF OPERATIONS:
- GENERAL
- SEQUENCES DESCRIBED APPLY TO THE EMERGENCY GENERATOR, INTAKE LOUVER, EXHAUST FAN, AND MAKE UP AIR UNIT.
 - THE BCS SHALL BE CAPABLE OF ADJUSTING ALL SETPOINTS THROUGH THE OPERATOR INTERFACE, WITHOUT MANUAL ADJUSTMENT OF EQUIPMENT.
 - THE BCS SHALL MONITOR GENERATOR RUN STATUS VIA THE GENERATOR CONTROLLER INTERFACE.
 - THE BCS SHALL MONITOR GENERATOR FAULT STATUS VIA THE GENERATOR CONTROLLER INTERFACE.
- COMBUSTION AIR CONTROL
- UPON ACTIVATION OF THE EMERGENCY GENERATOR SET, THE ASSOCIATED COMBUSTION AIR INTAKE LOUVER DAMPER SHALL OPEN.
 - UPON SHUT-DOWN OF THE EMERGENCY GENERATOR SET, THE COMBUSTION AIR INTAKE LOUVER DAMPER SHALL CLOSE.
- TEMPERATURE CONTROL - GENERATOR OFF
- UPON A DECREASE IN SPACE TEMPERATURE BELOW 60°F AT (TT-02), THE GAS-FIRED MAKE UP AIR UNIT SHALL BE ENABLED AND OPERATE AS DESCRIBED BELOW.
 - UPON AN INCREASE IN SPACE TEMPERATURE ABOVE 75°F AT (TT-02), THE EXHAUST FAN SHALL OPERATE. UPON STARTUP THE DAMPER (FCV-05) SHALL OPEN. UPON SHUT-DOWN THE VENTILATION DAMPER (FCV-05) SHALL CLOSE.
- GAS-FIRED RTU CONTROL
- UPON BEING ENABLED BY THE BCS, THE MAKE UP AIR UNIT SUPPLY FAN SHALL OPERATE AND THE UNIT OUTSIDE AIR DAMPER (FCV-06) SHALL OPEN.
 - THE GAS HEATER SHALL BE STAGED IN INCREMENTS (REFER TO EQUIPMENT SCHEDULE FOR QUANTITY OF STAGES) TO MEET THE SPACE TEMPERATURE OF 65°F (ADJUSTABLE.)
- FUEL OIL PUMP CONTROL
- THE PACKAGED DAYTANK SYSTEM (BY GENERATOR MANUFACTURER) SHALL OPERATE UNDER ITS OWN CONTROLS.
 - THE DAYTANK SHALL ISSUE A GENERAL "FAULT" ALARM TO THE BCS.
 - TRANSFER PUMPS SHALL BE CONTROLLED TO AUTOMATICALLY ALTERNATE LEAD/LAG PUMPS TO PROVIDE EVEN RUNTIME.
 - WHEN DAY TANK LEVEL FALLS TO 50%, DAY TANK CONTROLLER SHALL START THE TRANSFER PUMPS AND OPEN THE SOLENOID VALVE AT THE INLET TO THE DAY TANK.
 - WHEN DAY TANK LEVEL RISES TO 90%, DAY TANK CONTROLLER SHALL CLOSE THE SOLENOID VALVE AT THE INLET TO THE DAY TANK AND STOP THE TRANSFER PUMPS.
 - IF THE DAY TANK LEVEL REACHES 100%, THE CONTROLLER SHALL ISSUE A HIGH LEVEL ALARM, SHUT DOWN THE TRANSFER PUMPS, AND ENERGIZE THE OVERFLOW PUMP. OVERFLOW PUMP SHALL RUN UNTIL DAY TANK LEVEL REACHES 90%.
 - IF THE DAY TANK LEVEL REACHES 40%, THE CONTROLLER SHALL ISSUE A LOW LEVEL ALARM. THE "LEAD" TRANSFER PUMP SHALL BE DE-ENERGIZED AND THE "LAG" TRANSFER PUMP SHALL BE ENERGIZED. THE EXISTING BMS SHALL READ THIS ALARM THROUGH DRY CONTACTS AND INDICATE ALARM TO BE CLEARED MANUALLY.
 - IF THE DAY TANK LEVEL REACHES 10%, THE CONTROLLER SHALL SHUT DOWN THE EMERGENCY GENERATOR AND ISSUE A NO FUEL GENERATOR SHUT DOWN ALARM. THIS ALARM SHALL BE REPORTED ON THE EXISTING BMS.
 - IF THE DAY TANK LEAK DETECTOR HAS DETECTED A LEAK, CONTROLLER SHALL SHUT DOWN TRANSFER PUMPS AND CLOSE DAY TANK INLET SOLENOID.
- ALARMS / SAFETIES
- GENERATOR FAULT: THE BCS SHALL ISSUE A GENERAL ALARM INDICATING A GENERATOR FAULT - DELAY: NONE.
 - DAYTANK CONTROLLER ALARM: THE BCS SHALL ISSUE A GENERAL ALARM INDICATING A DAY TANK ALARM - DELAY: NONE.

GENERAL NOTES:

- ALL DIESEL FUEL OIL PIPING SHALL BE CLEANED, PRIMED, AND PAINTED. LABEL SUPPLY AND RETURN, DIRECTION OF FUEL FLOW TO PIPES WITH DECALS.
- PRESSURE TEST ALL SUPPLY AND RETURN FUEL OIL PIPING TO 100 PSI FOR 4 HOURS.
- FILL, VENT, AND PRIME FUEL OIL SYSTEM.

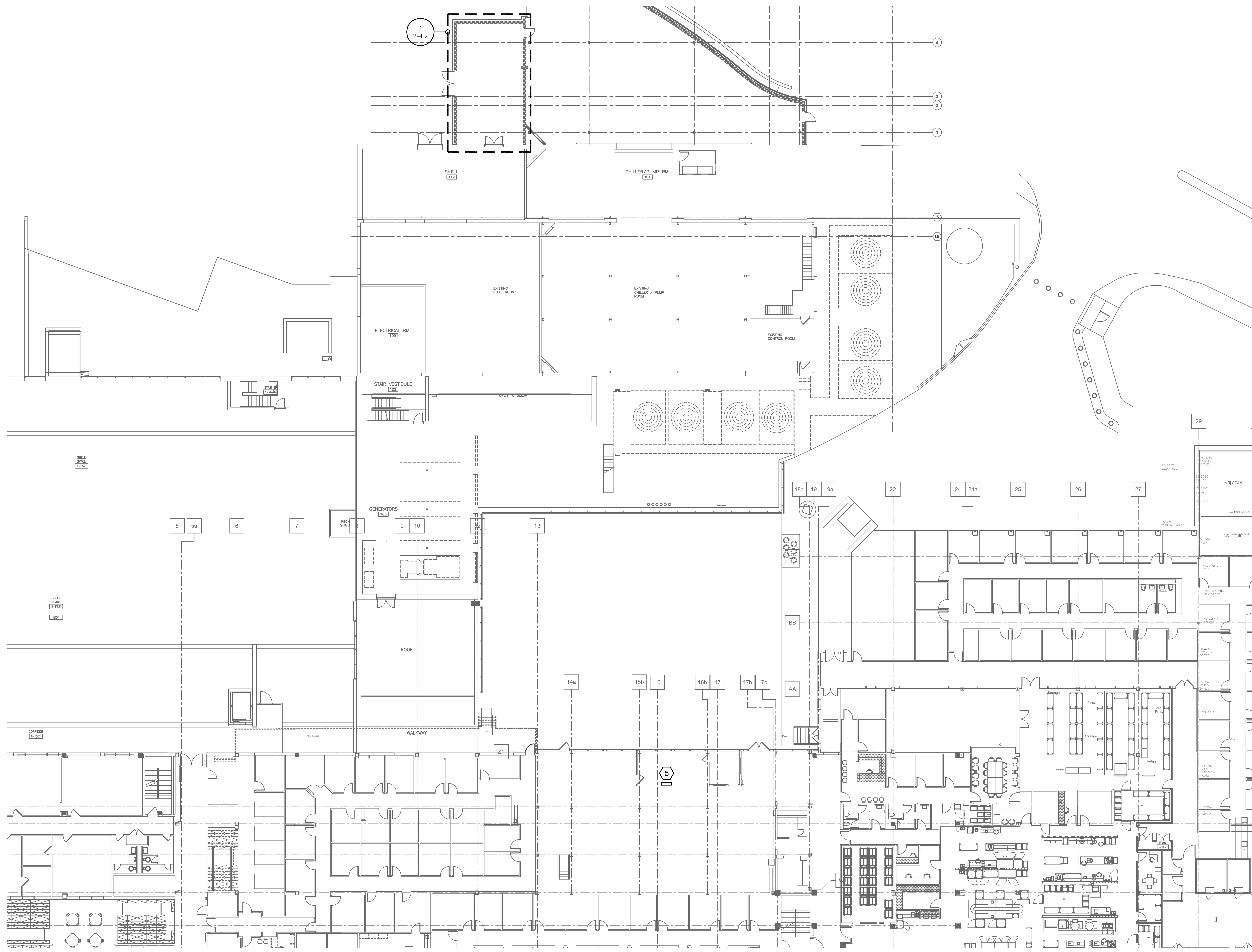
FUEL OIL PUMP PACKAGE SCHEDULE

| MARK | LOCATION | SYSTEM | TYPE | CIRCULATING FLUID | | | TEMP. °F (°C) | TYPE | MOTOR (EACH) | | |
|-------------|-----------------------------|---------------------|------------------------------|-------------------|--------------|----------------------------|---------------|------------------------|--------------|---------------|-----|
| | | | | FLUID | FUEL OIL GPM | PRESSURE DROP FT (M) FLUID | | | NOMINAL HP | VOLTAGE PHASE | RPM |
| FOP-3A & 3B | FUEL OIL STORAGE TANK VAULT | EMERGENCY GENERATOR | DUPLEX POSITIVE DISPLACEMENT | NO. 2 FUEL OIL | 10 | 40(12.2) | 80(27) | END SUCTION, BASE MTD. | 3/4 | 460-3 | - |

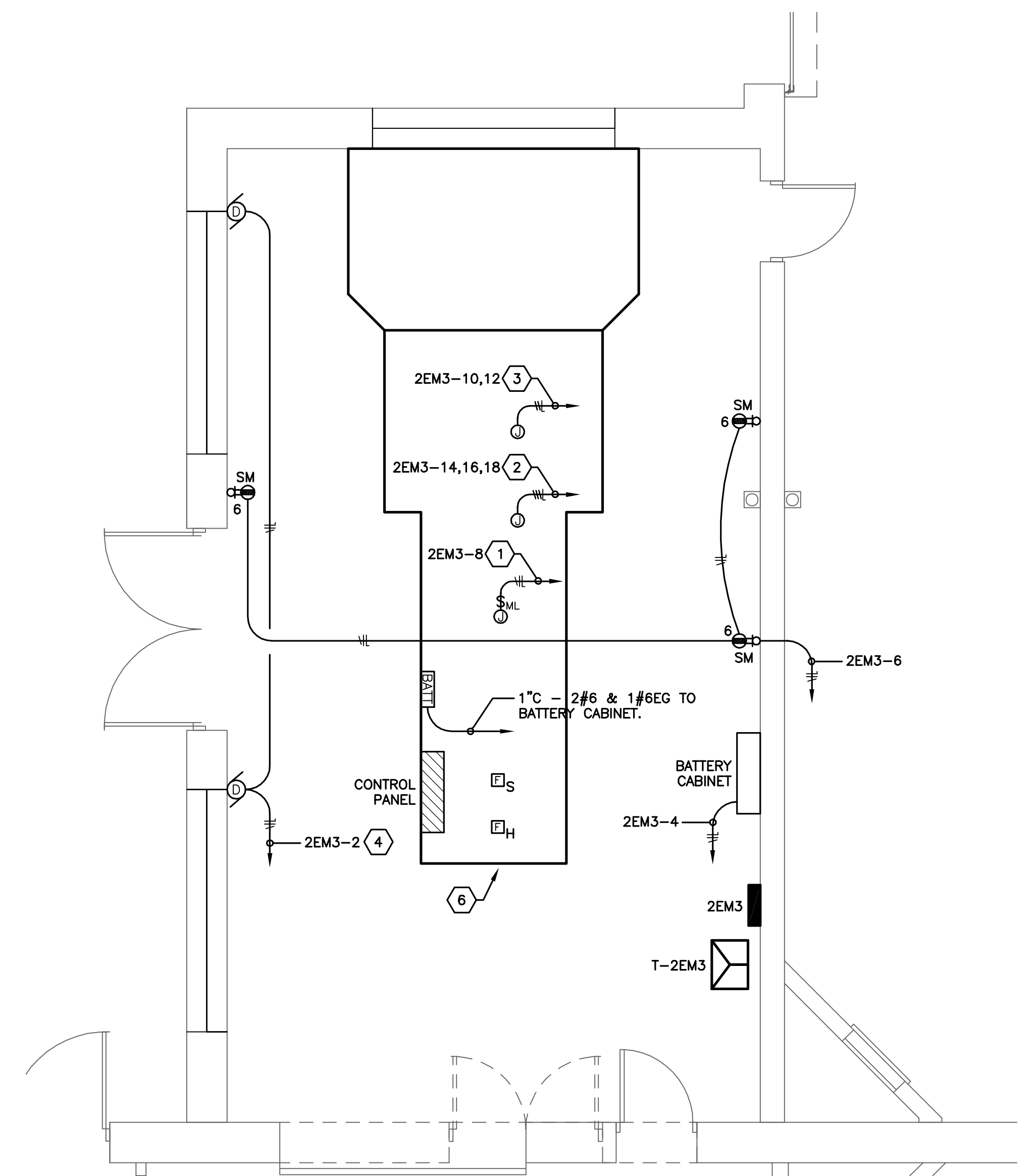
- BASIS OF SPECIFICATION: DUPLEX POSITIVE DISPLACEMENT SCREW PUMP PACKAGE.
- REFER TO SPECIFICATIONS FOR REQUIRED ACCESSORIES.
- PUMP CASINGS SHALL BE CAPABLE OF ACCEPTING ONE LARGER IMPELLER SIZE.
- PROVIDE CONTROLLER, INCLUDES CONTACTS, PLC AND MODBUS INTERFACE FOR TRANSMISSION OF PUMP RUN SIGNALS AND ALARM INDICATIONS. TRANSFER LOGIC OPERATION SHALL TRANSFER PUMP OPERATION WHEN NO FUEL FLOW IS SENSED VIA A REMOTE FLOW SWITCH AND THE EMERGENCY GENERATOR SET IS RUNNING.
- PROVIDE DUAL POWER INLET, 460V-3Ø-60Hz, WITH POWER TRANSFER RELAY AND POWER AVAILABLE/CONNECTED/FAN INDICATORS.
- PROVIDE PUMP STARTERS FOR EACH PUMP. NEMA 1 ENCLOSED, UNIT MOUNTED, HINGE-OPEN FRONT DOOR, FULL-VOLTAGE, 3-PHASE CIRCUIT BREAKER COMBINATION MOTOR STARTER, WITH CONTROL POWER TRANSFORMER, HOA SWITCH, RUN INDICATOR, POWER AVAILABLE INDICATOR.

FULLY SPRINKLERED

| | | | | | | | | |
|---|--|--|--|----------------------------|---|-----------------|---------------------------------|--|
| CONSULTANTS: | | ARCHITECT: | | Drawing Title | Project Title | Project Number | Office of Facilities Management | |
| FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL (440) 546-9088 FAX (440) 546-9090 | | Perspectus architecture 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F.216.752.3833 | | FUEL OIL FLOW DIAGRAM | CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES | 541-11-108 | | |
| FINAL CD SUBMISSION - FOR CONSTRUCTION | | DATE | | Approved: Project Director | Location | Building Number | 2-H5 | |
| Revisions: | | Date | | | VAMC - WADE PARK | 1 | | |
| | | | | | Date | Checked | Department of Veterans Affairs | |
| | | | | | 04-06-2012 | BMW | | |
| | | | | | | RPH | | |



FIRST FLOOR ELECTRICAL KEY PLAN
SCALE: 1/16" = 1'0"
0' 8' 16' 32' 64'

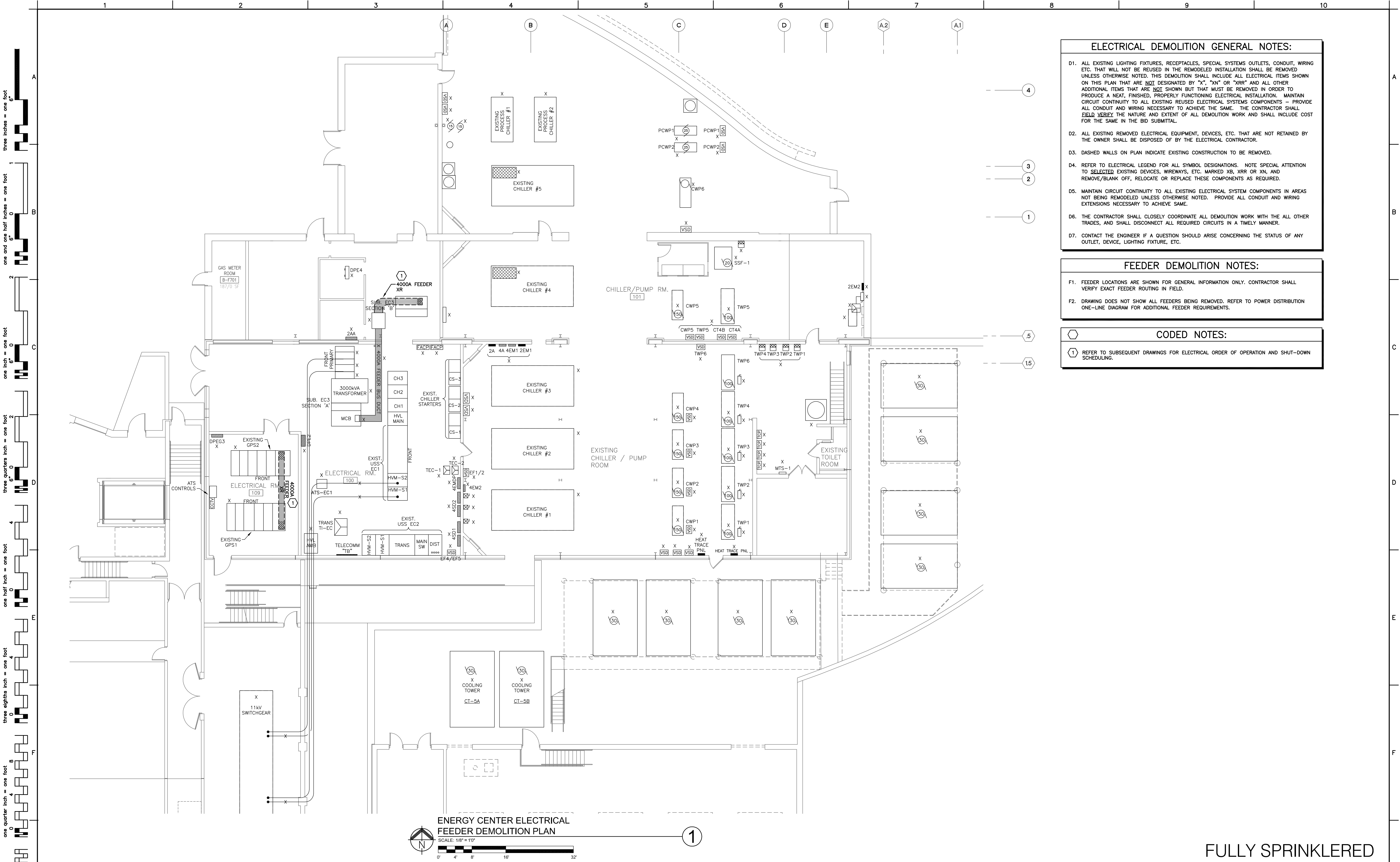


ENLARGED GENERATOR
ELECTRICAL NEW PLAN
SCALE: 1/8" = 1'0"
0' 4' 8' 16' 32'

- GENERATOR PLAN CODED NOTES:**
- CONNECT FUEL RETURN PUMP TO 20A-120V-1Ø CONNECTION IN '2EM3' VIA 3/4" C. - 2#12 & 1#12 EG. VERIFY EXACT SIZE AND VOLTAGE REQUIREMENTS WITH EQUIPMENT MANUFACTURE AND SUBMIT ANY DISCREPANCIES TO THE ENGINEER.
 - CONNECT BLOCK HEATERS TO 35A-208V-3Ø CONNECTION IN '2EM3' VIA 3/4" C. - 3#8 & 1#8 EG. VERIFY EXACT SIZE AND VOLTAGE REQUIREMENTS WITH EQUIPMENT MANUFACTURE AND SUBMIT ANY DISCREPANCIES TO THE ENGINEER.
 - CONNECT ANTI-CONDENSATION HEATER TO 20A-208V-1Ø CONNECTION IN '2EM3' VIA 2#12 & 1#12 EG. VERIFY EXACT SIZE AND VOLTAGE REQUIREMENTS WITH EQUIPMENT MANUFACTURE AND SUBMIT ANY DISCREPANCIES TO THE ENGINEER.
 - PROVIDE 20A-120V-1Ø CONNECTION TO MULTIPLE DAMPER MOTORS. REFER TO GENERATOR SEQUENCE OF OPERATIONS FOR LOUVER POSITION REQUIREMENTS. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER. PROVIDE CONTROL TRANSFORMER WITH PRIMARY-SECONDARY FUSING TO MATCH CHARACTERISTICS OF NEW DAMPER MOTOR AND CONTROLS.
 - PROVIDE GENERATOR REMOTE ALARM ANNUNCIATOR PANEL. LOCATE ADJACENT TO EXISTING GENERATOR REMOTE ALARM PANELS IN ROOM. VERIFY EXACT LOCATION WITH VAMC COTR. PROVIDE ALL CONNECTION WIRING IN 3/4" CONDUIT PER OHIO CATERPILLAR REQUIREMENTS.
 - NEW GENERATOR "G8"-2000kW/2500kVA, 480/277V-3Ø-4W (MANUFACTURER: OHIO CATERPILLAR). VERIFY EXACT REQUIREMENTS WITH SPECIFICATIONS AND SUBSEQUENT DRAWINGS.

FULLY SPRINKLERED

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <div>Revisions</div> <table><tr><td>1</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td></td></tr><tr><td>4</td><td></td></tr><tr><td>5</td><td></td></tr><tr><td>6</td><td></td></tr><tr><td>7</td><td></td></tr><tr><td>8</td><td></td></tr><tr><td>9</td><td></td></tr><tr><td>10</td><td></td></tr></table> | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | <div>CONSULTANTS:</div> <div>FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL: (440) 546-9090 FAX: (440) 546-9090</div> | | <div>ARCHITECT:</div> <div>Perspectus architecture 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F. 216.752.3833</div> <div>DESIGN AND CONSTRUCTION DOCUMENTS ARE INSTRUMENTS OF SERVICE AND GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PERSPECTUS ARCHITECTURE.</div> | | <div>Drawing Title</div> <div>GENERATOR ENLARGED PLAN</div> <div>Approved: Project Director</div> | | <div>Project Title</div> <div>CHILLER PLANT GENERATOR & DISTRIBUTION UPGRADES</div> <div>Location</div> <div>VAMC - WADE PARK</div> <div>Date</div> <div>04-06-2012</div> <div>Checked</div> <div>MPL</div> <div>Drawn</div> <div>JDM</div> | | <div>Project Number</div> <div>541-11-108</div> <div>Building Number</div> <div>1</div> <div>Drawing Number</div> <div>2-E2</div> | | <div>Office of Facilities Management</div> <div>Department of Veterans Affairs</div> | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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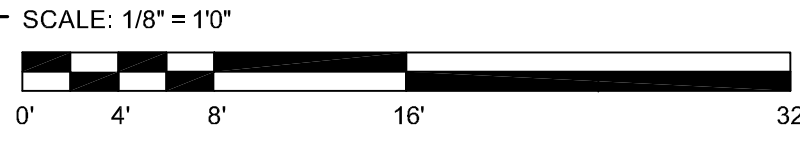


- ELECTRICAL DEMOLITION GENERAL NOTES:**
- D1. ALL EXISTING LIGHTING FIXTURES, RECEPTACLES, SPECIAL SYSTEMS OUTLETS, CONDUIT, WIRING ETC. THAT WILL NOT BE REUSED IN THE REMODELED INSTALLATION SHALL BE REMOVED UNLESS OTHERWISE NOTED. THIS DEMOLITION SHALL INCLUDE ALL ELECTRICAL ITEMS SHOWN ON THIS PLAN THAT ARE NOT DESIGNATED BY "X", "XN" OR "XRR" AND ALL OTHER ADDITIONAL ITEMS THAT ARE NOT SHOWN BUT THAT MUST BE REMOVED IN ORDER TO PRODUCE A NEAT, FINISHED, PROPERLY FUNCTIONING ELECTRICAL INSTALLATION. MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING REUSED ELECTRICAL SYSTEMS COMPONENTS - PROVIDE ALL CONDUIT AND WIRING NECESSARY TO ACHIEVE THE SAME. THE CONTRACTOR SHALL FIELD VERIFY THE NATURE AND EXTENT OF ALL DEMOLITION WORK AND SHALL INCLUDE COST FOR THE SAME IN THE BID SUBMITTAL.
 - D2. ALL EXISTING REMOVED ELECTRICAL EQUIPMENT, DEVICES, ETC. THAT ARE NOT RETAINED BY THE OWNER SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR.
 - D3. DASHED WALLS ON PLAN INDICATE EXISTING CONSTRUCTION TO BE REMOVED.
 - D4. REFER TO ELECTRICAL LEGEND FOR ALL SYMBOL DESIGNATIONS. NOTE SPECIAL ATTENTION TO SELECTED EXISTING DEVICES, WIREWAYS, ETC. MARKED XB, XRR OR XN, AND REMOVE/BLANK OFF, RELOCATE OR REPLACE THESE COMPONENTS AS REQUIRED.
 - D5. MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING ELECTRICAL SYSTEM COMPONENTS IN AREAS NOT BEING REMODELED UNLESS OTHERWISE NOTED. PROVIDE ALL CONDUIT AND WIRING EXTENSIONS NECESSARY TO ACHIEVE SAME.
 - D6. THE CONTRACTOR SHALL CLOSELY COORDINATE ALL DEMOLITION WORK WITH THE ALL OTHER TRADES, AND SHALL DISCONNECT ALL REQUIRED CIRCUITS IN A TIMELY MANNER.
 - D7. CONTACT THE ENGINEER IF A QUESTION SHOULD ARISE CONCERNING THE STATUS OF ANY OUTLET, DEVICE, LIGHTING FIXTURE, ETC.

- FEEDER DEMOLITION NOTES:**
- F1. FEEDER LOCATIONS ARE SHOWN FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL VERIFY EXACT FEEDER ROUTING IN FIELD.
 - F2. DRAWING DOES NOT SHOW ALL FEEDERS BEING REMOVED. REFER TO POWER DISTRIBUTION ONE-LINE DIAGRAM FOR ADDITIONAL FEEDER REQUIREMENTS.

- CODING NOTES:**
- 1 REFER TO SUBSEQUENT DRAWINGS FOR ELECTRICAL ORDER OF OPERATION AND SHUT-DOWN SCHEDULING.

ENERGY CENTER ELECTRICAL
FEEDER DEMOLITION PLAN



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FEEDER ROUTING GENERAL NOTES:

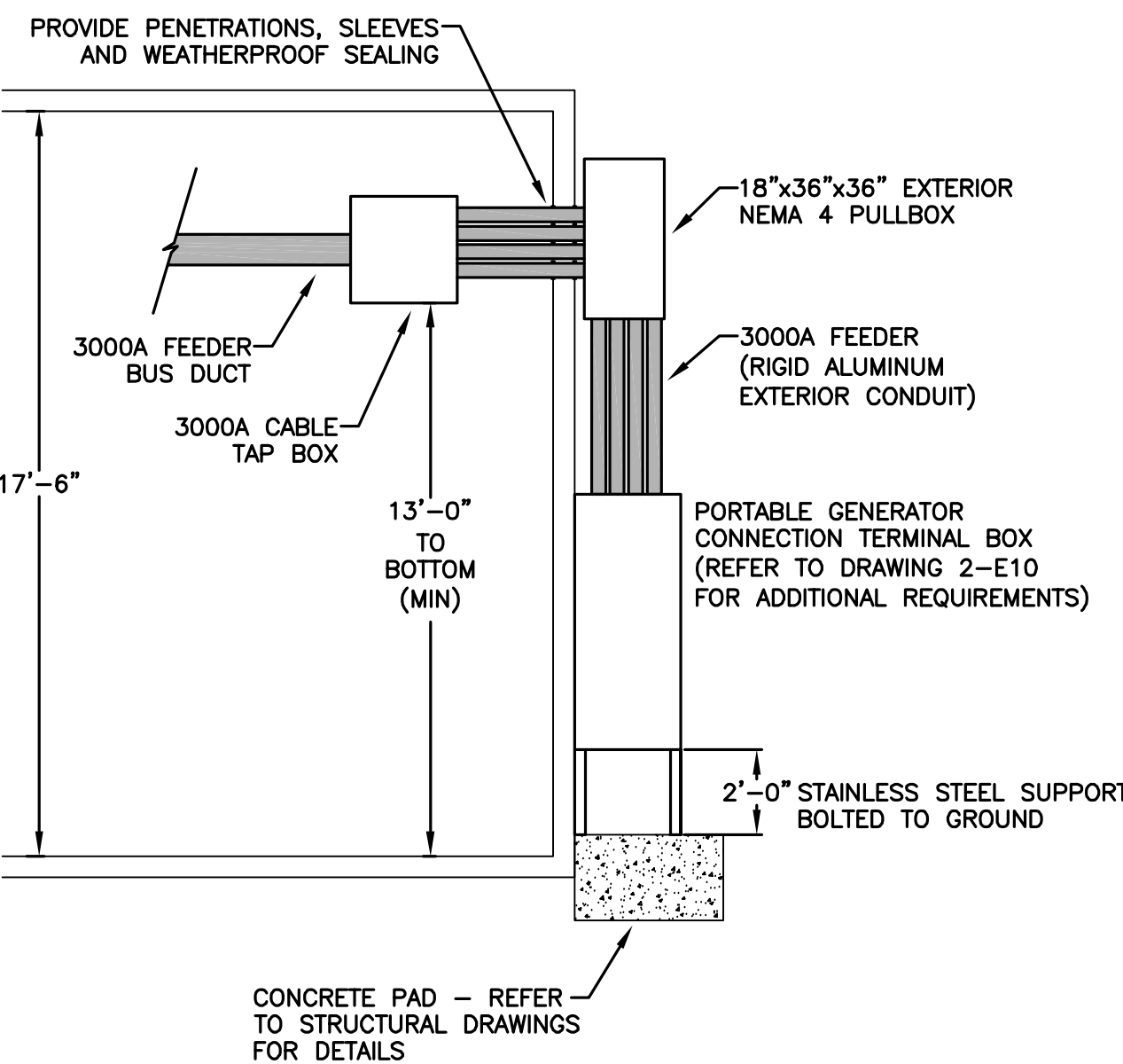
- F1. CONTRACTOR SHALL CONCEAL CONDUIT AND WIRING IN WALLS AND ABOVE CEILING AND PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO MECHANICAL EQUIPMENT. PROVIDE RIGID ALUMINUM CONDUITS AT EXTERIOR LOCATIONS. SEAL ALL ROOF PENETRATIONS WATER-TIGHT AND ALL WALL PENETRATIONS TO MAINTAIN FIRE RATING.
- F2. ELECTRICAL FEEDER ROUTING LOCATIONS SHOWN ARE FOR BIDDING PURPOSE ONLY. CONTRACTOR SHALL COORDINATE EXACT ROUTING OF FEEDERS IN FIELD AND PROVIDE ALL JUNCTION BOXES, BENDS, OFFSETS, CONNECTORS, SUPPORTS, ETC. AS NECESSARY FOR A COMPLETE SYSTEM.
- F3. DRAWING DOES NOT SHOW ALL NEW FEEDERS. REFER TO POWER DISTRIBUTION ONE-LINE DIAGRAM FOR ADDITIONAL FEEDER REQUIREMENTS.
- F4. EXACT SIZE AND QUANTITY OF PULLBOXES REQUIRED SHALL BE COORDINATED WITH THE NEC. VERIFY THE EXACT LOCATION IN FIELD.

COORDINATION NOTE:

ROUTING OF CONDUITS IS FOR GENERAL INFORMATION ONLY. ADDITIONAL OFFSETS, BENDS, ETC. MAY BE REQUIRED TO AVOID EXISTING PIPING, CONDUITS, ETC. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED CONDUITS, PULLBOXES, CABLES, ETC. TO COMPLETE THE FEEDER INDICATED ON THE POWER DISTRIBUTION ONE-LINE DIAGRAM. COORDINATE THE EXACT LOCATIONS OF THE EXISTING CONDUITS AND ROUTING IN FIELD.

ELECTRICAL CODED NOTES:

1. VERIFY EXACT TIE IN LOCATION WITH GENERATOR VENDOR.
2. PROVIDE 3000A COPPER END CABLE TAP BOX. VERIFY EXACT LOCATION IN FIELD. PROVIDE ALL NECESSARY COMPONENTS (SUPPORTS, CONNECTIONS, TAPS, LUGS, TERMINATIONS, ETC) FOR A COMPLETE SYSTEM. MOUNT CABLE TAP BOX AS HIGH AS POSSIBLE IN ROOM (MINIMUM 13'-0" TO BOTTOM OF EQUIPMENT).
3. PROVIDE 3000A-480/277V-3Ø-4W-EG COPPER FEEDER BUS DUCT. CONNECT TO CABLE TAP BOX NEAR PORTABLE GENERATOR TERMINAL BOX. PROVIDE ALL NECESSARY COMPONENTS (SUPPORTS, T-SYSTEM, FLANGES, CONNECTIONS, ETC) FOR A COMPLETE SYSTEM. MOUNT BUS DUCT AS HIGH AS POSSIBLE IN ROOM (MINIMUM 13'-0" TO BOTTOM OF EQUIPMENT).
4. ELECTRICAL CONDUITS SHALL PENETRATE EXTERIOR WALL AT HEIGHT OF CABLE TAP BOX. RUN CONDUITS DOWN EXTERIOR WALL THROUGH PULL BOX TO PORTABLE GENERATOR CONNECTION. PROVIDE ALL WEATHERPROOF SEALING AND SLEEVES THROUGH WALL AS REQUIRED PER SPECIFICATIONS. EXTERIOR CONDUITS AND CONNECTORS SHALL BE RIGID ALUMINUM AND SEALED PROPERLY. PAINT EXTERIOR CONDUITS AND PULL BOX TO MATCH BUILDING COLOR. SUBMIT PAINT COLOR SAMPLE TO VAMC COTR WITH SHOP DRAWINGS. SEE ELEVATION THIS DRAWINGS FOR ADDITIONAL REQUIREMENTS.



EXTERIOR WALL PENETRATION ELEVATION
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ENERGY CENTER ELECTRICAL
FEEDER NEW PLAN

SCALE: 1/8" = 1'-0"
0' 4' 8' 16' 32'

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CONSULTANTS:

FREDRICK, FREDRICK & HELLER
ENGINEERS, INC.
672 EAST ROYALTON ROAD
BROADVIEW HTS., OHIO 44147
TEL: (440) 546-1000
FAX: (440) 546-9000



ARCHITECT:

Perspectus
architecture

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Drawing Title
**ENERGY CENTER ELECTRICAL
FEEDER NEW PLAN**

Approved: Project Director

Project Title
**CHILLER PLANT
GENERATOR &
DISTRIBUTION UPGRADES**

Location
VAMC - WADE PARK

Date
04-06-2012

Checked
MPL

Drawn
JDM

Project Number
541-11-108

Building Number
1

Drawing Number
2-E4

Office of
Facilities
Management

Department of
Veterans Affairs